

# Curriculum Vitae

Vadim A. Ermolayev, PhD

**Date of birth:** July 10, 1962

**Nationality:** Ukraine

**Citizenship:** Ukraine

**Address (office):** 66, Zhukovskogo st., 69600, Zaporizhzhya, Ukraine

**Address (private):** 24(201) Zheleznodorozhnaya st., 69063, Zaporizhzhya, Ukraine

**Phone:** +380 61 228 75 38

**Cell phone:** +380 67 617 77 27

**Fax:** +380 61 228 75 38 (Phone/Fax),

**E-Mail:** [vadim@ermolayev.com](mailto:vadim@ermolayev.com)

**Personal web site:** <http://ermolayev.com/>

**Languages:** Russian (native language), English (very good spoken and written), Ukrainian (good spoken and written), French (basic knowledge, spoken)

**Current Position:** Docent (**Assoc. Prof.**), [Department of Information Technologies, Zaporizhzhya National University](#), Zaporizhzhya, Ukraine

**Professional Societies** ACM, UAITP



## Summary

**Vadim Ermolayev** had studied Applied Mathematics and Computer Science at Samara Aerospace Institute, Russia and Dnepropetrovsk State University, Ukraine in 1979-1984. He has obtained an MSci Diploma in Applied Mathematics at Dnepropetrovsk State University in 1984 (cum laude). In 1994 he was awarded a PhD degree in Mathematical Modelling at Zaporizhzhya State University, Ukraine. In 1997 he received his habilitation as the Docent (Assoc. Prof.) at the Department of Mathematical Modelling and IT of Zaporizhzhya State University.

From August 1984 till December 1986 Mr. Ermolayev worked as a research engineer, senior research engineer at Zaporizhzhya Research Institute for Radio Communication. In 1987 he was affiliated as a visiting researcher at Dnepropetrovsk All-Union Pipe Research Institute. From April 1987 till now he works at Zaporizhzhya State (later - National) University at various positions: researcher, senior researcher, director of University Computing Centre, Docent. Since 1995 he is also in charge of design and implementation of the University-wide Network and Information infrastructure as university administration adviser, project manager and principal researcher. In 1997-2001 he was the member of Technical Committee of Ukrainian National Research and Education Network (URAN). Since 1991 he took and is taking part as a researcher, senior researcher, principal researcher and project manager in many research and RTD projects funded by European Commission (FP6 and FP7), European Training Foundation, Ukrainian Ministry of Education and Science, German Federal Ministry of Education and Research (BMBF), European Industrial Companies, International Renaissance Foundation, Zaporizhzhya State University.

Since 1994 Dr. Ermolayev teaches undergraduate and graduate courses in Software Algorithms and Data Structures, the Architectures of Operating Systems and Database Systems, Advances in Information Systems, Software Engineering and Programming Technologies, Agent and Semantic Technologies for e-Business, Knowledge Engineering, the Semantic Web and Web Services, Logic Programming and Artificial Intelligence. He supervised over 50 successfully accomplished master theses and several PhDs. He has also

been the member of about 20 PhD Committees. From September 2000 till July 2003 he served also as the deputy president of the University responsible for IT, networking and computing.

Dr. Ermolayev has published over 100 papers as journal articles, book chapters, refereed conference and workshop contributions, technical reports. He also co-edited or (co-)authored several proceedings volumes, technical manuals and textbooks. He serves as a member of Editorial Advisory Boards, Editorial Review Boards of international journals and book series, a program committee member of many international conferences and workshops.

Dr. Ermolayev also possesses working experience in industrial R&D. He worked at various branches of industry as a full-time employee, a freelance sub-contractor, or a research consultant. He also serves to EC as an independent expert in ICT programme.

Dr. Ermolayev is the founder and the head of the [Intelligent Systems Research Group](#) (ISRG) at Zaporizhzhya National University.

## Selected Career Highlights

- 1984 – ongoing: **30+ years of experience in research and development** at various positions in Academia and Industry
- 1993 – ongoing: **20+ years of experience in teaching** as assistant professor, associate professor, professor, visiting professor
- 1997 – ongoing: **15+ years in National and International Professional Bodies** (Technical Committee of Ukrainian National Research and Education Network – 1997-2001. the chair of the regional branch of the Ukrainian Association of IT Professionals – 2007-ongoing)
- 1992 – 2003: **10+ years of experience in medium- and top-level University management** (Managing Director of University Computing Centre, Deputy President for IT, networking and computing)
- 2002-ongoing: **10+ years of experience in serving the European Commission as an expert** in FP6 IST, FP7, H2020 ICT – project reviews, proposals evaluation, serving as a rapporteur, a call rapporteur
- 1995-ongoing: **15+ years of experience in research and development consulting** for several National and European companies and organizations

## Achievements

In Research:

- Ontology Engineering:
  - **The Suite of PSI Ontologies** (for Cadence Design Systems GmbH). Domain: Performance Management in Engineering Design. More information: <http://isrg.kit.znu.edu.ua/ontodocwiki/>
  - **ICTERI Scope ontology** (For ICTERI community, <http://icteri.org/>). Domain ICT in Education, Research, and Industrial Applications. More information: <http://isrg.kit.znu.edu.ua/icteriwiki/index.php/ICTERI-Terms>
- Ontology engineering methodologies and tools:
  - **OntoElect ontology engineering methodology** (with Olga Tatarintseva). More information: [http://link.springer.com/chapter/10.1007%2F978-3-319-03998-5\\_8](http://link.springer.com/chapter/10.1007%2F978-3-319-03998-5_8)
  - **Ontology Difference Visualizer** (with Anton Copylov). More information: [http://ermolayev.com/eva\\_personal/PS/ECKJM-CIAO-2010-ODV-CR.pdf](http://ermolayev.com/eva_personal/PS/ECKJM-CIAO-2010-ODV-CR.pdf)
  - **Ontology Instance Migration Engine** (with Maxim Davidovsky). More information: [http://ermolayev.com/eva\\_personal/PS/DET-IDC-IJAIT-postprint.pdf](http://ermolayev.com/eva_personal/PS/DET-IDC-IJAIT-postprint.pdf)
- Multi-agent Systems and Semantic Technologies:
  - **Agent-based framework for semantic web service composition**. More information: <http://www.igi-global.com/bookstore/article.aspx?titleid=3045>
  - **Meaning Negotiation Framework**. More information: [http://ermolayev.com/eva\\_personal/PS/EKMV-ISWC-05-Draft.pdf](http://ermolayev.com/eva_personal/PS/EKMV-ISWC-05-Draft.pdf)

- **Agent-based framework for Ontology Alignment** (with Maxim Davidovsky). More information: [http://isrg.kit.znu.edu.ua/a-boa/index.php/Main\\_Page](http://isrg.kit.znu.edu.ua/a-boa/index.php/Main_Page)

In Consulting and Community Service:

- **Research consultant** for Cadence Design Systems GmbH  
Introduced Agent and Semantic Technologies to the company. Facilitated coordination of research and development in intelligent software tools for project performance management. Served as the scientific proxy for the company in several research and development projects with international consortia.
- **Call Rapporteur** for FP7 ICT calls 5, 8, 10, 11; H2020 ICT calls 15, 17, 22a

In Teaching and Student Supervision:

- **Curriculum development and teaching:** Algorithms and Data Structures, Introduction to Artificial Intelligence and Logic programming, Knowledge bases and Expert Systems, Semantic Web and Semantic Technologies
- **Visiting Professorships:** Alpen-Adria-Universität, Juvaskyla University
- PhD and Master projects supervision: Agent and Semantic Technologies

In Academic Administration and Management:

- Founder and head of **Intelligent Systems Research Group** (<http://ermolayev.com/ISRG/>)
- Deputy president of Zaporizhzhya State University (IT, Networking, Computing) in 2000–2003

## Education

- 1991-1994: Dept. of Applied Mathematics Zaporizhzhya State Univ., Zaporizhzhya, Ukraine: **Ph.D. (Mathematical Modeling)**. Dissertation Thesis: Active Meta-Data Repository System for Adaptable Data Base Application Design
- 1981-1984: Inst. of Math. & Mechanics, Dnepropetrovsk State Univ., Dnepropetrovsk, Ukraine: **M.Sci. (Applied Mathematics)** cum laude

## Professional Training

- **2004:** [University of Nice - Sophia Antipolis](#), France, [International Project Management Institute](#). Course: Quality Management in Software Development Projects.
- **2001:** European Centre for **Strategic Management of Universities**, Brussels, Belgium International Institute for Educational Training, Paris, France: Certificate of Participation in the Distance Education Course on ‘The Management of University-Industry Partnerships’

## Employment History

- **09.2004 – 06.2005:** Department of Programming and Information Technologies, Humanitarian University “Zaporizhzhya Institute of State and Municipal Governance”, Zaporizhzhya, Ukraine – **Professor**
- **07.2003 – ongoing:** Department of Information Technologies, Zaporizhzhya State University, Zaporizhzhya, Ukraine – **Associate Professor**
- **09.2000 – 07.2003:** Zaporizhzhya State University, Zaporizhzhya, Ukraine – **University Deputy President (IT, Networking, Computing)**
- **04.1987 – 09.2000:** Zaporizhzhya State University, Zaporizhzhya, Ukraine – **Senior Research Engineer, Head of Laboratory, Head of Computing Centre**
- **11.1995 – 05.1996:** Swiss Academy of Engineering and Charmilles Technologies SA, Geneva, Switzerland – **Post-Doc Researcher** (funded by Branco Weiss Foundation, Switzerland)

- **08.1984-12.1986:** Radio Communication Research Institute, Zaporizhzhya, Ukraine –  
**Research Engineer, Senior Research Engineer**

## Visiting Positions

- **08.2005:** [15th Jyvaskyla Summer School](#), [Univ. of Jyvaskyla](#), Finland – **Visiting Professor**
- **01.2003–02.2003:** [Dept. of Business Informatics and Application Systems](#), [Inst of Informatics](#), [Univ. of Klagenfurt](#), Austria – **Visiting Professor**
- **03.2001–04.2001:** [Division of Mathematics and Computer Science](#), Vrije University, Amsterdam, the Netherlands – **Visiting Researcher**
- **08.1994 – 03.1995:** [Swiss Academy of Engineering](#) (Branco Weiss Foundation) / [Charmilles Technologies SA](#), Geneva, Switzerland – **Visiting Researcher**
- **01.1987 – 04.1987:** Dnepropetrovsk all-Union Pipe Research Institute, Dniepropetrovsk, Ukraine – **Visiting Senior Research Engineer**

## STATEMENT OF CAREER GOALS

### Introduction

My career goal is to increase knowledge, skills, and welfare in society through research and development that facilitates the advancement of computer science and, in particular, Distributed Artificial Intelligence, Intelligent Information Systems, Semantic Technologies, Knowledge Engineering and Management. Taking part in research in these areas brings me a lot of intellectual satisfaction. It is rewarding because my field of research investigates intriguing and often challenging problems that often have significant real world impact. Therefore, I'm always keenly interested in how the results of research and development find their way to and response at industries. This work involves both the development of theory and empirical methods, including conceptual modeling, ontology engineering, algorithm design as well as implementation of intelligent software systems. Some of them are commercially fielded.

I always tried my best in seeking for the research questions that may have impact in the future. Of course, being the member of the research community always helped a lot in shaping out the research agenda. Therefore I readily accept community professional services like professional networking, reviewing, taking part in the organization of scientific events, providing expertise to international funding bodies. I also enjoy sharing my excitement with research and emerging ideas with the members of my research group and my students through mentoring and teaching undergraduate and graduate courses. This kind of generous collaboration stimulates me a lot. My interaction with colleges and students gives me a sense of passing a legacy on to the next generation of researchers and practitioners.

### Research

#### Current Research Interests

Area of Interest	Recent Research Projects
Semantics in Big Data and Linked Data	<a href="#">SemData</a>
Informal processes, context switching and collaboration, performance modeling and management, business intelligence, Social Web	<a href="#">PSI</a> , <a href="#">PRODUKTIV+</a> , <a href="#">ACTIVE IP</a>
Knowledge engineering, knowledge management, logics and reasoning	<a href="#">SemData</a> , <a href="#">PSI</a> , <a href="#">PRODUKTIV+</a> , <a href="#">RACING</a> , <a href="#">UnIT-Net</a>
Software agents and multi-agent systems, simulation, negotiation, collaboration	<a href="#">PSI</a> , <a href="#">PRODUKTIV+</a> , <a href="#">RACING</a>
Semantic Web and Semantic Web Services, Web 2.0	<a href="#">UnIT-Net</a> , <a href="#">RACING</a>
Business Process Dynamics	<a href="#">PSI</a> , <a href="#">RACING</a>

A particular research topic that thrills me throughout my research career is capturing the dynamics and the adaptability of real world in intelligent software or knowledge artifacts.

Software systems in general, information and business management systems in particular are increasingly demanded to possess more intelligence, robustness, and adaptability to users' needs. Following the trend of information, knowledge, and business distribution they become more de-centralized. Last, but not least, they become more agile – capable of adapting themselves to changing requirements and to the changes in their environment. These factors outdate and invalidate software engineering assumptions that: (i) a central designer controls the behavior of all system components and (ii) the particularities of the requirements and system's behavior may all be hard-coded in the software. Hence, today's software engineering methodologies necessarily involve more declarative and knowledge-based approaches.

Making an information system or another software system more distributed, adaptable, and intelligent is a challenging task which is on the research agenda in many fields. In particular, it is a high-priority problem for Distributed Artificial Intelligence, Service Oriented Computing, Semantic Technologies, Knowledge Engineering communities.

**My strategic research objective** is to develop knowledge-based means for engineering distributed, self-adapting, intelligent software systems which are responsive to the dynamic features in their application domains. This paves the way to building distributed systems that are robust against uncontrolled external influences and capable of pro-actively adapting themselves to the changes in the environment for optimizing their performance in dynamics, at run-time.

### **Ontology Engineering and Knowledge Management**

I consider this research focus as central for my group. In ontology engineering and knowledge management we focus on developing frameworks and tools enabling the evolution of knowledge in the form of ontologies. These research activities are both fundamental and application oriented.

The work on ontology evolution is done together with Natalya Keberle. Our results in classifying different types of ontology changes [C31] resulted in defining the requirements for the formal model of ontology evolution. Natalya's further work resulted in Ontology Evolution Framework comprising the formal logical extension of OWL language with the constructs enabling reasoning using modalities and metric time, OWL-MeT [W4]. The development of OWL-MeT has been supplemented with the extension of Pellet reasoner [W4] to enable inferences on ontology versions in discrete metric time space. The most recent results in OWL-MeT development may be retrieved from <http://ermolayev.com/owl-met/>. Our work with Vladimir Vlaimirov on developing the framework and the proof of concept software tool implementation for ontology instance migration between different ontology versions [J7] resulted in the partial tool support for our Ontology Evolution Framework. This work has been continued with Maxim Davidovsky with whom we further elaborated the framework for migrating instances between ontology versions for a broader case of different but semantically overlapping ontologies [C14, J1]. The approach is based on the use of transformation rules that are inferred from the analysis of the schemas of the source and the target ontologies. Yet another bit of software tool development for ontology evolution management has been done with Anton Copylov and resulted in a graphical visualizer of the change in the schemas of two different OWL DL ontologies – Ontology Difference Visualizer (ODV) [W1]. These results may be further used for developing methodologies for ontology engineering and ontology evolution support in collaborative distributed settings for different subject domains. I plan continuing this work in further projects.

Another focal aspect of ontology engineering gaining particular importance as a distinct research topic after the emergence of Web 2.0 is collaborative ontology development, refinement, and evaluation. An initial attempt of my group to develop a semantically rich graphical language for collaborative ontology debate and design has been undertaken in 2002. We have presented our early results at the regular meeting of OntoWeb SIG on Content Standards. One more important capability of a distributed intelligent system (a tool) for collaborative ontology design is its ability to assist in making agreements on the semantics of different ontology concepts and their contexts. In RACING we have developed a formal framework shaping out meaning negotiation strategies in a distributed agent-based system with heterogeneous ontologies

developed by different owners [C25]. This approach has been further implemented in an Agent-Based Structural Difference Discovery Engine (SDDE) – a system of collaborative software agents negotiating on semantic contexts [C11, C8]. We also pay attention to the methodological facet in this vibrant research field. With Olga Tatarintseva we develop the collaborative ontology engineering methodology for refining ontologies based on the feedbacks collected from the subject domain experts in the form of votes – OntoElect [C13, C10, B8].

Yet one more ontology engineering challenge of reliable ontology evaluation is in the focus of our research. Ontology, though being a shared and agreed specification of conceptualization, still reflects the subjective views of its creators. Indeed, it is possible to build different ontologies which formally represent the same body of knowledge. Ontology evaluation provides a way to select an ontology satisfying a set of predefined criteria, ranging from the presentation of the required level of structural knowledge granularity to matching the corpus of known factual information about the domain or task, acquired from appropriate documents or standards. A “golden standard” ontology may exist for a domain if the formal specification of its conceptualization is shared and committed to by the majority of domain experts. This widely accepted ontology is normally used to develop knowledge-intensive applications or to formalize the corpus of domain facts and data. A newly developed ontology of such a domain may be evaluated against the “golden standard”. Such an evaluation answers how well the evaluated ontology matches the existing applications and knowledge corpus – the agreement and the commitment of the majority of domain experts. A new ontology may also be evaluated against the set of non-formalized criteria, norms, rules characterizing the domain in question. Unfortunately “golden standard” theories do not exist for many interesting domains. If so, the ontology may be evaluated using a purely logical approach applying the techniques like OntoClean or using statistical approaches. The weakness of these methodologies is that they provide meaningful results only for taxonomies. The question about how to reliably evaluate complex ontologies with richer relationships between their concepts is still open. Our current results [C21] propose a partial answer to this important research question. In our approach an upper layer of the evaluated ontology is built and the attempt to map it to the foundational ontologies describing commonsense knowledge is undertaken. If the ontology in question maps well to the common sense one may expect that the commitment of domain experts to it may be reached considerably easily. If the mapping is fractional then the ontology is either the extension of the common sense conceptualization or is badly designed. The upper layer is designed comprising the backbone taxonomy as its key component. Therefore formal logical or statistical frameworks mentioned above may be also used for the evaluation. In PSI project we evaluated the Suite of PSI ontologies v.1.6 by mapping them through PSI Upper-Level Ontology to several well known foundational ontologies: SUMO+WordNet and DOLCE [C21]. We found out that ontology evaluation in this case is actually the process of mapping of the evaluated ontology to common sense formalized in the foundational theories. This process is obviously twofold: both a foundational ontology and the evaluated ontology may benefit from each other as far as the creation of a foundational ontology is incremental. Evaluated domain ontology may benefit from the detection of its discrepancies with common sense which obviously may be the obstacle for ontological commitment. A foundational ontology may also benefit from the alignment of a new Domain ontology to it. Bad alignment results might be a signal to start thinking about the refinement of a foundational theory as well. Moreover, mapping to several foundational ontologies may also reveal the differences between the targets: different focuses, completeness, etc.

Our applied research and development in Ontology Engineering is engineering domain and foundational descriptive theories and coding them in ontology specification languages – mainly in different subsets of OWL. In the last several years we engineered several ontologies in different projects. In RACING project we designed Task and Negotiation Ontologies [W6] as generic (upper-level) theories describing the content of collaborative task execution and contracting negotiations for dynamic agent coalitions in distributed information retrieval. We also designed User Profile ontology for aligning semantics in personified intelligent query processing [C29, C27]. In UnIT-Net project we developed the suite of ontologies for UnIT-Net mediator system (Mediator Domain Ontology, Resource-Domain Mapping Ontology) and several ontologies describing our Case Study information resources [C27, I2, J10, J8, R8]. In PSI project we designed and implemented in OWL DL several consecutive versions of PSI Suite of Ontologies. PSI Suite of Ontologies is a modular descriptive theory of the Domain of Dynamic Engineering Design Processes in microelectronic and integrated circuit design [W5, T3, C23, C20, B13]. In PRODUKTIV+ project we assisted in developing several extension ontologies for the domain of performance management in engineering design. We also developed the Performance Ontology [C19].

My personal research focus in Ontology Engineering and Knowledge Management is the development of conceptual and formal theories for business process dynamics, actor coalitions and collaboration, reaching agreements. These theories are evaluated in our projects through implementation as different ontologies and through their use in software. Another research focus of my group is developing theoretical and methodological frameworks as well as prototyping software tools for ontology engineering [C14, W1].

### **Dynamics and Adaptability in Information Systems**

My first attempt to solve the challenging problem of information system adaptability was undertaken in my Ph.D. research. This research has been carried out in frame of the project funded by Ukrainian Government in 1991-1994. In a conventional RDBMS a MetaData layer is a declarative means describing the structure of data. I used the metaphor of a data dictionary and extended it by adding the capabilities of describing the interrelationships among the data structures and the code of an information system. This enhancement allowed designing information systems which loosely depend on the changes in MetaData and Business Logic. Resulting Active MetaData Repository Framework [C40, R17] has been used in designing and developing information systems in the Domains which are substantially dynamic. Some of the software artifacts which have been later developed using my framework are commercialized. The first commercial development was the “University Entrant” Information System [C37-C39] which has been and is used in different versions at several Ukrainian Universities since 1994. I also used the framework in my Post Doc research and development project funded by the Swiss Academy of Engineering and Charmilles Technologies SA (CT) to design and develop “CT Techno Cookee” Information System [R16, M1, M2] for managing technology files of CT EDM machines. As a follow-up to my Ph.D work I continued evaluating my Active MetaData Repository Framework by applying it to the development of new information systems from scratch or to the refinement of the legacy information systems in Zaporizhzhya State University. This work resulted in the development of Integrated Computational Media at Zaporizhzhya University.

Currently I consider this R&D topic out of my focus and do not plan investing resources in it.

### **Intelligent Information Systems and Enterprises**

My further search for more effective ways to capturing dynamics and adaptability in software systems brought me to the conclusion that the most promising approach is making a system more intelligent – i.e. being capable of perceiving environmental influences and pro-actively adapting itself to more optimally pursuing its goals. This understanding led me to the study of the Agent-Based Systems. I have chosen intelligent integration of our University Information Systems as a kind of a test bed for evaluation. We have tried and prototyped a very simple agent-based wrapper-mediator architecture integrating three University information systems as a proof of concept implementation in our Virtual University project (1999-2002). The major conceptual approach developed in this project was the Unified Information Space (e.g., [C32]). In the Unified Information Space software agents have been used as intelligent wrappers of the services provided by the legacy information systems in a distributed environment. We also did some work in developing graphical geo-spatial user-friendly interfaces for this mediator system. The work on intelligent service wrappers led us to the necessity of capturing the dynamics of typical processes as the assemblies of those services. Agent-based framework for planning process modeling [C34] was one of the interesting results we obtained in this research. At this time my group has become a member of AgentLink and OntoWeb European Networks of Excellence. Participation in these networks gave us valuable research stimuli and led to more thorough work in developing descriptive theories (ontologies) for our research field. Our first ontologies describing task planning knowledge using contracting negotiation approach [W6] have been developed as a result. As a visiting researcher at the Vrije University Amsterdam I spent some effort in verifying if our framework may be used in e-Business Domain. I found out that the answer is positive. This gave us an extra push in studying the dynamics and adaptability of business processes in such fields as e-Business and the emerging Semantic Web.

My current research focus in the field of Intelligent Information Systems and Enterprises is Informal Process Adaptability and Dynamics.

### **Business and Informal Process Dynamics**

Our approach in developing process models emphasizes business process dynamics. We consider that the topology of a process can not be fully shaped out at design time but is formed by its intelligent participants at run time using task and activity patterns for choosing among promising alternative ways to continuation. Such an approach, though more computationally expensive, is capable of modeling and simulating complex

real world processes where decisions on either the path of continuation or the termination of a process are made at run time. Good analogies are found in Distributed Artificial Intelligence and particularly in Dynamic Distributed Planning. Therefore it is natural that the use of software agents in a multi-agent system is central to such an approach. Our first version of a dynamic business process modeling framework has been developed in RACING project and used the results of the Virtual University project as a background knowledge. We tried applying this framework to developing a framework for dynamic agent-based Semantic Web Service composition [J11, B12], the architecture for intelligent distributed information retrieval [C28], the fine-grained descriptive theory of a Dynamic Engineering Design Process in Microelectronics [B13]. These applications helped us refining the approach as a whole as well as its central components: the model of a dynamic process based on coalition formation [J11, C28, C30]; negotiation model and negotiation ontology [W6, C24]. Software implementations using different variants of this framework are referenced below.

This research remains one of my priority focuses. My research goal is to further develop and validate the framework for adaptable execution and re-planning with changing goals and stochastic environmental influences.

### **Intelligent Distributed Information Retrieval**

The Domain of Distributed Information Retrieval has become the field of our research interest as one of highly dynamic e-Business Domains. Our research in the field was run in two of our projects. RACING developed an agent-based mediation framework and architecture for distributed information retrieval on the Web. The approach [E1, C28] was based on the idea that an information resource is an autonomous object which is wrapped by a rational software agent providing information retrieval service. RACING framework assumed that many heterogeneous and autonomously evolving resources are mediated by a centralized mediator multi-agent system. This mediator provided services of user query decomposition and processing, resource wrapper(s) matchmaking, ontology alignment. RACING software prototype has been fielded. One of the central pieces of the RACING framework is the formal framework for designing strategies for multi-issue non-symmetric meaning negotiations among software agents in a distributed information retrieval system [C25]. Such a strategy compares the contexts of two background domain theories not concept by concept, but the whole context to the other context by accounting the relationships among concepts, the properties and the constraints over properties. It contains the mechanisms for measuring contextual similarity through assessing propositional substitutions and to provide argumentation through generating extra contexts. It uses presuppositions for choosing the best similarity hypotheses and to make the mutual concession to the common sense monotonic. It provides the means to evaluate the possible eagerness to concede through semantic commitments and related notions of knowledgeability and degree of reputation. RACING project web site can be found at <http://www.zsu.zp.ua/racing/>.

UnIT-Net project in its research part was focused on the development of the software infrastructure of intelligent information interchange among Universities. UnIT-Net framework [I2, C27, J10] was conceptually based on RACING, but used semantically reinforced Web Services [J10] instead of software agents. UnIT-Net project web site can be found at <http://www.unit-net.org.ua/Default.aspx?page=1&lng=2>. Trying different basic software engineering frameworks gave us extensive experience in prototyping distributed intelligent systems based on different architectural principles.

Currently I do not plan having projects in distributed intelligent information retrieval. Though the topic is very interesting and important, I plan focusing on Semantic Web Agents, Ontology Engineering and their applications in Business Performance, Big Data Computing, and Linked Open Data research.

### **Semantic Web and Semantic Web Services**

Semantic Web Services are the emerging technology enhancing conventional Web Services and promising to become one of the key enablers of the Semantic Web. Being self-described and self-contained modular active components, Semantic Web Services will become the key elements in assembling intelligent software infrastructures in the near future. I believe that the challenge in this research field is to make Semantic Web Services automatically tradable and usable by artificial agents in their rational, proactive interoperation and collaboration on the next generation of the Web. In [B12] we called this emerging synergy involving software agents, Semantic Web Services and other Semantic Web technologies (like ontology representation languages) *Semantic Web Agents*. The challenge of designing and implementing Semantic Web Agents may be solved by creating frameworks, standards, and re-usable generic software for automatic Web Service discovery, execution, composition, interoperation and monitoring. In addition to these important capabilities,



the list should be extended by the means making services the object of automated negotiation and trade. It is also important for future service enabled Semantic Web infrastructures to cope with business logic, reputation and trust with respect to services and service providing agents, dynamic character of assembled business processes. Our main fundamental results in the Semantic Web and Semantic Web Services domain are: the framework for agent-based rational Semantic Web Service Composition [J11, B12]; the framework for building meaning negotiation strategies for Semantic Web Agents [C25]; an upper-level Negotiation Ontology [C24].

My research goal in Semantic Web Agents is to bridge the gap between the Semantic Web and Distributed Artificial Intelligence (Software Agents) by building agent-based approaches solving Semantic Web problems. This work is tightly linked to the activities of my group in business process dynamics and ontology engineering and knowledge management. In the field of Semantic Web Agents we see our challenge in building prototyping and fielding intelligent distributed agent-based software capable of reaching agreements both on business-related and semantics-related aspects.

### **Engineering Design Performance**

Performance management is very important in virtually every area of human activity and is known to be a complex problem. However performance management as a rigorous discipline is still under-developed. A mature or at least a suitably grounded framework of the non-linear performance management is highly demanded in different industries. Despite significant research efforts the result is not the shortly expected one. Probably the main reason for this unsatisfactory situation is the highly interdisciplinary nature of performance management research, involving many fields of varying states of maturity and methodological practice. Disciplines that play a vital role in performance management research are for example: economics, engineering science, management theory, cultural anthropology, information technologies, psychology, education, artificial intelligence, philosophy, and so on. Today's performance measurement and management practices are based mostly on strategic level benchmarking. Such an approach, though providing reasonably sound indications of what is good or bad in terms of performance, does not help well enough in revealing the reasons. Moreover these measures are generally based on the past and do not help estimating what will happen in the future.

My former activity as a research consultant of Cadence Design Systems GmbH aimed at developing a rigorous theory of engineering design performance which is capable of assisting in such forward-looking assessments. In order to make more grounded and predictive assessments of engineering design performance at the required level we have to apply the measures to engineering design processes at the finest grain level possible. A negative consequence of taking this way is that the volume and the complexity of data to be processed are far too high to perform such an analysis by hand before the changes pass the point of no return. Therefore, a methodology and an intelligent software tool for such analyses is required as one of the important factors ensuring better performance of a design system.

The objective of our PSI and PRODUKTIV+ projects was to develop such a methodology and a tool capable to discover the reasons for the weaknesses of a design system and accounting for the pro-activity of human designers and the stochastic character of the external factors. The approach is to simulate a design system as a social and self-regulating team of autonomous actors having differing professional and cultural backgrounds. Some information about PSI can be retrieved from <http://ermolayev.com/ISRG/ISRG-projects-PSI.htm>. PRODUKTIV+ project web site is at <http://www.edacentrum.de/produktivplus/>.

### **Publication Highlights**

7 edited collections, 10 book chapters, 27 journal articles, 46 refereed conference and workshop papers. Details are given in the Publication List below.

### **Teaching**

In addition to pursuing my career goals in research, I want to continue high quality teaching and effective mentoring of students. I derive satisfaction from being able to communicate complex ideas in simple ways,

usually using examples in my lectures. My style is to make students think through problems incrementally during class in a discussion format. Based on the observed students' progress during my courses, I believe this approach works well. I have also found that teaching had made me a better researcher, writer, and presenter.

I have generated several new courses and taught them at different European Universities. These are listed in the attached documentation. The course materials that I generated from scratch can be found on the courses' web pages almost in every case. I have taught courses that consisted of undergraduates, ones that mainly consisted of M.Sci.- level students, and ones where most of the students were at the Ph.D.-level. As a part of my Associate Professorship duties at Zaporizhzhya National University I contributed to the development of the new Informatics Programme at BSci and MSci levels. I also developed the Curricula for several disciplines within this Programme.

Besides regular university teaching, I enjoy giving my courses at Summer Schools. One of my courses has been developed initially for a Summer School<sup>1</sup>. I have also prepared and taught several tutorials at conferences and industrial sites.

Apart of contributing to knowledge transfer to a new generation of researchers and practitioners, my goal in teaching is pragmatic selection of those individuals who are best capable for and are willing to invest themselves in research.

## RESEARCH EXPERIENCE

### Previous Scientific Activities/Positions

Position	Institution	Dates (from-to)
<b>Professor</b>	Dept. of Programming and IT, Humanitarian Univ. "Zaporizhzhya Institute of State and Municipal Governance", Zaporizhzhya, Ukraine	09.2004 – 06.2005
<b>Principal researcher and local project co-ordinator</b>	Zaporizhzhya State Univ., Zaporizhzhya, Ukraine (UnIT-Net: IT in University Management Network TEMPUS/TACIS multiplier project MP-JEP-2010-2003)	09.2003 – 11.2005
<b>Principal researcher and project co-ordinator</b>	Zaporizhzhya State Univ., Zaporizhzhya, Ukraine (RACING – research project funded by Ukrainian Ministry of Education and Science)	01.2002 – 01.2005
<b>Principal researcher</b>	Zaporizhzhya State Univ., Zaporizhzhya, Ukraine (Agent-Enabled Unified University Information Space – research project funded by Ukrainian Ministry of Education and Science)	01.1999 – 12.2001
<b>Senior Researcher</b>	Zaporizhzhya State Univ., Zaporizhzhya, Ukraine (Development of Integrated Computational Media of a University – research project funded by Ukrainian Ministry of Education and Science)	01.1997 – 12.1998
<b>Senior Researcher</b>	Zaporizhzhya State Univ., Zaporizhzhya, Ukraine (Mathematical Models for Complex Dynamic Systems – research project funded by Ukrainian Ministry of Education and Science)	01.1995 – 12.1997
<b>Subcontractor</b>	Charmilles Technologies SA, Geneva, Switzerland	11.1995 – 05.1996
<b>PostDoc Researcher</b>	Swiss Academy of Engineering / Branco Weiss Foundation, Charmilles Technologies SA	08.1994 – 03.1995
<b>Senior Researcher</b>	Zaporizhzhya State Univ., Zaporizhzhya, Ukraine (Methods and Tools for Database Applications Flexibility Enhancement – research project funded by Ukrainian Ministry of Education and Science)	01.1991 – 12.1994

<sup>1</sup> Course title: Agent Technologies on the Semantic Web. Course materials can be found at: <http://ermolayev.com/ASW/>. It was first taught at the 15-th Jyvaskyla Summer School in 2005.

<b>Senior Researcher</b>	Scientific Research Dept., Zaporizhzhya State Univ., Zaporizhzhya, Ukraine	02.1990 – 05.1991
<b>Senior Researcher</b>	Dept. of Applied Mathematics, Zaporizhzhya State Univ., Zaporizhzhya, Ukraine	12.1989 – 02.1990
<b>Senior Research Engineer</b>	Dnepropetrovsk All-Union Pipe Research Institute, Dnepropetrovsk, Ukraine	01.1987 – 04.1987
<b>Research Engineer, Senior Research Engineer</b>	Research Institute for Radio Communication, Zaporizhzhya, Ukraine	08-1984 – 12.1986

## Involvement in Research and Development Projects

**2008 – 2011: ACTIVE** – Enabling the Knowledge Powered Enterprise (<http://www.active-project.eu/>)

**Project Objectives:** ACTIVE aims to increase the productivity of knowledge workers in a pro-active, contextualised, yet easy and unobtrusive way. The aim is to convert tacit and unshared knowledge – the "hidden intelligence" of enterprises – into transferable, interoperable and actionable knowledge to support seamless collaboration and to enable problem solving. A key aspect will be support for informal procedural knowledge - the informal collaboration and problem-solving tasks that drive much knowledge work in the enterprise.

**Funded by:** EU Framework Program 7, **Instrument:** Integrating Project (IP)

**Involved as:** a research consultant of Cadence Design Systems GmbH

**2005 – 2008: PRODUKTIV+**: Reference System for Measuring Design Productivity of Nanoelectronic Systems (<http://www.edacentrum.de/produktivplus/>)

**Project Objectives:** modeling, measurement and assessment of the productivity aspects of all components of the design system as well as the connection to business-management key data systems. For this purpose, research work is conducted on the following interrelated aspects:

- Development of a productivity model that covers the aforementioned components of the design system
- Automated data compilation of the quantities relevant to the productivity model,
- Computerized analysis and simulation procedures, as well as
- Exemplary application of the research results to different design projects that cover different job specifications for the circuit design.

**Funded by:** German Federal Ministry of Education and Research (BMBF)

**Involved as:** a research consultant of Cadence Design Systems GmbH

**2004 – 2010: PSI:** Performance Simulation Initiative (<http://ermolayev.com/ISRG/ISRG-projects-PSI.htm>)

**Project Objectives:** To develop the agent-based framework and the prototype of a multi-agent system for assessing and monitoring the productivity of dynamic engineering design processes in microelectronics design

**Funded by:** Cadence Design Systems, GmbH

**Type:** Industrial research project

**Involved as:** a research consultant

**2003 – 2005: UnIT-Net:** IT in University Management Network (<http://www.unit-net.org.ua/>)

**Project objectives:** To create the Unit-Net Network to disseminate best practices in IT for University management. To establish the Software Testing Laboratory to support collaborative activities in frame of Unit-Net Network. To develop the set of Specifications and the software prototype of Ukrainian Infrastructure for Electronic Data Interchange

**Funded By:** TEMPUS/TACIS (ETF, <http://www.etf.eu.int/>)

**Type:** TACIS Multiplier Project

**Involved as:** principal researcher, local coordinator

**2002 – 2005: RACING:** Rational Agent Coalitions for INtelliGent Mediation of Information Retrieval on the Net (<http://www.zsu.zp.ua/racing/>)

Research Project is financed by Ukrainian Ministry of Education and Science.

Involved as a **principal researcher** and **project coordinator**

**1999 - 2002 - Design of Mathematical Models and Methods of Description and Co-operation of the Elements of Unified Information Space in a University - wide Network based upon the Principles of Diakoptics and Master - Agent Architectures.**

Research Project financed by Ukrainian Ministry of Education.

Involved as a the **principal researcher**

**Personal Contribution:** Project idea and proposal. The architecture of the Unified Information Space. The framework for design and implementation of Information Space functional components based upon evolving intelligent agent communities. The model for business process representation within the Unified Information Space.

**1997 - 1998 - Development of Integrated Computational Media of a University** (Design and implementation of integrated network computational media including integrated university database shell based upon Internet and Intranet technologies as well as upon Active MetaData Repository Framework).

Research Project financed by Ukrainian Ministry of Education.

Involved as the **project manager** and the **principal researcher**

**Personal Contribution:** Project idea and proposal. Project management. The model and the Architecture of University-wide Information Media. Project intermediate and final deliverables. Project reports.

**1995 - 1997 - Mathematical Models for Complex Dynamic Systems:** (Design of the methods for modelling of various Complex Dynamic Systems in different Application Domains).

Research Project financed by Ukrainian Ministry of Education.

Involved as the **senior researcher**

**Personal Contribution:** The model for evolving and adaptable information systems based on diakoptical principles. The chapters in the Intermediate and the Final Project Deliverables (Reports).

**1991 - 1994 - Methods and Tools for Database Applications Adaptability Enhancement:** (Development of the methods and software tools based upon Active MetaData Repository approach for enhancing the properties of adaptability and reusability of Database Applications (RDBMS)).

Research Project financed by Ukrainian Ministry of Education.

Involved as the **researcher**

**Personal Contribution:** The methodology and (partially) the Toolkit for the design of adaptable Client - Server Applications. Implementation of a case study application.

## Participation in European Networks of Excellence

**1998 - 2005 AGENTLINK, AGENTLINK II and AGENTLINK III** – Europe’s Network of Excellence for Agent-Based Computing (<http://www.agentlink.org/>) SIG on Intelligent Information Agents (I2A) (<http://www.dbgroup.unimo.it/IIA/>)

**2001 - 2004 ONTOWEB** - Ontology-based information exchange for knowledge management and electronic commerce (<http://www.ontoweb.org/>) SIG on Contents Standards ([http://zeus.ics.forth.gr/forth/ics/isl/projects/ontoweb/content\\_standards.html](http://zeus.ics.forth.gr/forth/ics/isl/projects/ontoweb/content_standards.html))

**2002 - 2003 AgentCities** – WG for Service Coordination for Emergency Response Applications (<http://www.agentcities.org/Activities/WG/Rescue/>)

## Involvement in International Exchange Programs

**2013 - 2005 SemData** – a four year project, started in October 2013, funded under the International Research Staff Exchange Scheme ([IRSES](#)) of the EU Marie Curie Actions. It is mainly focused on allowing exchanges of members among the participating institutions, bringing together research leaders across the globe from the relevant communities: the linked data, semantic web and the database systems.

## Cordination of RTD Projects

**2002 Publication of Scientific Almanac "Southern Ukraine" on the Internet** Project funded by [International Renaissance Foundation](#) (IRF), Grant No: 2129521

**2001 Electronic Encyclopedia of Ukrainian Cossacks** [Electronic version of the book](#) published by Zaporizhzhya Institute of Ukrainian Cossacks

**2001 Zaporizhzhya Region - 10 Years of the Independence of Ukraine** Multimedia CD content developed for [Zaporizhzhya Chamber of Commerce and Industry](#)

**1995 - 1996 CT Techno Cookee** Information System designed for [Charmilles Technologies SA](#) (CT), Geneva.

## Working for Industry

- 12.1987 - 03.1988. Senior research engineer, All-Union Pipe Research Institute, Dnepropetrovsk, Ukraine  
**Duties:** Business process analyses (research planning and management); System programmers and administrators team consulting (IBM Mainframe, MVS, VM SP); Preparation of the pre-proposal for Research Planning and Management IS Design and Implementation project. Writing several programs for Mainframe workload analysis.
- 08.1984-03.1988. Engineer, Senior Research Engineer Research Institute for Radio Communication, Zaporizhzhya, Ukraine  
**Duties:** Application and system software programmer, database administrator (IBM Mainframe; SVS, MVS, VM SP; ADABAS; IBM 370 Assembler, Fortran, PL/1).
- 08.1994-03.1995. Software Engineer, Charmilles Technologies SA, Geneva, Switzerland  
**Duties:** Project planning & development, requirements analyses, workflow and data modelling, database implementation, prototype software design, technical report writing, software design, software testing (ISO 9000).

## Consulting Services

- MINRES Technologies GmbH, Munich, Germany (research and development, 2011-ongoing)
- Cadence Design Systems GmbH, Munich, Germany (research and development, 2004-2010)
- The Ministry of Health Care of Ukraine, Kiev, Ukraine (IT, 2003-2004)
- Regional Branch of the National Bank of Ukraine, Zaporizhzhya, Ukraine (IT, 2003)
- Regional Chamber of Commerce and Industry, Zaporizhzhya, Ukraine (IT and content development, 2001)
- JSC AutoZAZ-Daewoo, Zaporizhzhya, Ukraine (research and development, 2000)
- Charmilles Technologies SA, Geneva, Switzerland (software development, 1995-1996)

## EVIDENCE OF TEACHING PERFORMANCE

### CURRICULA PREPARATION

#### Semantic Web Technologies

graduate: <http://kit.znu.edu.ua/iLec/9sem/SWT/>

#### Introduction to Logic Programming and Artificial Intelligence

graduate, 2 modules: <http://kit.znu.edu.ua/iLec/7sem/LPAI/>

### **Agent Technologies on the Semantic Web**

graduate, (summer school) 1-semester course, <http://ermolayev.com/ASW/>

### **Knowledge Bases and Expert Systems**

undergraduate, 1-semester course, <http://virtuni.education.zp.ua/lib/program/eva/OKB/e-book/>

### **Agent-Enabled e-Business Technologies** (graduate, 1-semester course)

### **Basic Algorithms and Data Structures** (undergraduate, 2-semester course).

Part 1. **Basic Algorithms and Data Structures** <http://kit.znu.edu.ua/iLec/2sem/swpci/kurs.html>

Part 2 **Sorting Algorithms** <http://kit.znu.edu.ua/iLec/3sem/swpci/kurs.html>

### **Architectures of Operating Systems and Database Systems**

graduate, 1-semester course

### **Contemporary Software Applications and Systems**

graduate, 1-semester course

### **Software Engineering and Programming Technology**

undergraduate, 1-semester course

## **COURSES TAUGHT by year and semester (since 2004):**

Semester	Course Title	Where
<b>2014</b>		
Fall	The Basics of Computer Software. Part 2. <a href="#">Sorting Algorithms</a> <a href="#">Introduction to Logic Programming and AI</a> <a href="#">Semantic Web Technologies</a>	Zaporizhzhya National Univ. Zaporizhzhya National Univ. Zaporizhzhya National Univ.
Spring	The Basics of Computer Software. Part 1. <a href="#">Basic algorithms and Data Structures</a> <a href="#">Knowledge Bases and Expert Systems</a>	Zaporizhzhya National Univ. Zaporizhzhya National Univ.
<b>2013</b>		
Fall	The Basics of Computer Software. Part 2. <a href="#">Sorting Algorithms</a> <a href="#">Introduction to Logic Programming and AI</a> <a href="#">Semantic Web Technologies</a>	Zaporizhzhya National Univ. Zaporizhzhya National Univ. Zaporizhzhya National Univ.
Spring	The Basics of Computer Software. Part 1. <a href="#">Basic algorithms and Data Structures</a> <a href="#">Knowledge Bases and Expert Systems</a>	Zaporizhzhya National Univ. Zaporizhzhya National Univ.
<b>2012</b>		
Fall	The Basics of Computer Software. Part 2. <a href="#">Sorting Algorithms</a> <a href="#">Introduction to Logic Programming and AI</a> <a href="#">Semantic Web Technologies</a>	Zaporizhzhya National Univ. Zaporizhzhya National Univ. Zaporizhzhya National Univ.
Spring	The Basics of Computer Software. Part 1. <a href="#">Basic algorithms and Data Structures</a> <a href="#">Knowledge Bases and Expert Systems</a>	Zaporizhzhya National Univ. Zaporizhzhya National Univ.
<b>2006-2011</b>		
Fall	The Basics of Computer Software. Part 2. <a href="#">Sorting Algorithms</a> <a href="#">Introduction to Logic Programming and AI</a>	Zaporizhzhya National Univ. Zaporizhzhya National Univ.
Spring	The Basics of Computer Software. Part 1. <a href="#">Basic algorithms and Data Structures</a> <a href="#">Knowledge Bases and Expert Systems</a>	Zaporizhzhya National Univ. Zaporizhzhya National Univ.
<b>2006-2007</b>		
Fall	The Basics of Computer Software. Part 2. <a href="#">Sorting Algorithms</a>	Zaporizhzhya National Univ.
Spring	The Basics of Computer Software. Part 1. <a href="#">Basic algorithms and</a>	Zaporizhzhya National Univ.

	<a href="#">Data Structures</a>	
	<a href="#">Knowledge Bases and Expert Systems</a>	Zaporizhzhya National Univ.
<b>2005</b>		
Fall	The Basics of Computer Software. Part 2. <a href="#">Sorting Algorithms</a>	Zaporizhzhya National Univ.
	<a href="#">Agent Technologies on the Semantic Web</a>	15th Jyvaskyla Summer Univ. of Jyvaskyla School.
Spring	The Basics of Computer Software. Part 1. <a href="#">Basic algorithms and Data Structures</a> .	Zaporizhzhya State Univ.
	<b>Introduction to Databases.</b>	Zaporizhzhya Humanitarian Univ.
<b>2004</b>		
Fall	The Basics of Computer Software. Part 2. <a href="#">Sorting Algorithms</a>	Zaporizhzhya State Univ.
	<a href="#">Knowledge Bases and Expert Systems</a>	Zaporizhzhya Humanitarian Univ.
	<a href="#">Information Systems and Data Structures</a>	Zaporizhzhya Humanitarian Univ.
Spring	The Basics of Computer Software. Part 1. <a href="#">Basic algorithms and Data Structures</a> .	Zaporizhzhya State Univ.
	<b>Software Engineering and Programming Technology</b>	Zaporizhzhya State Univ.
	<b>The Architectures of Operation Systems and Database Systems</b>	Zaporizhzhya State Univ.

## PhD Thesis Supervision

<b>Alferov E. A.:</b>	Extracting Ontologies from Text Streams
<b>Tatarintseva O. S.:</b>	OntoElect Methodology for Ontology Refinement
<b>Davidovsky, M.V.:</b>	Agent-based Ontology Alignment in P2P Systems
<b>Keberle, N. G.:</b>	Methods for Dynamic Ontology Modification, Adaptation and Conversion in Distributed Mediator IS
<b>Plaksin, S. L.:</b>	Co-ordination Patterns and Models for Business Process Management and Service Provision
<b>Petruchek, V. V.:</b>	Agent-Based Framework for E-Content Management on the Semantic Web
<b>Vladimirov, V. N.:</b>	Ontology-Based Meaning Negotiation and Ontology Debate

## Tutorials Taught:

- **Ontology Alignment and Applications in 90 Minutes.** Tutorial at the 9th Int Conf. [ICTERI 2013](#), Kherson, Ukraine, June, 2013
- **Agent-Based Ontology Alignment: Basics, Applications, Theoretical Foundations, and Demonstration.** Tutorial at the 2nd Int. Conf. on [Web Intelligence, Mining and Semantics \(WIMS 2012\)](#), Craiova, Romania, 13-15 June, 2012
- **Modeling and Simulation of Dynamic Engineering Design Processes.** Tutorial at the 24<sup>th</sup> Int. [Conference on Conceptual Modeling \(ER2005\)](#), Klagenfurt, Austria, October 24-28, 2005.
- **Basics of Software Agents** (based on my course on Agent-Based e-Business Technologies). Taught at Cadence Design Systems GmbH, January, 2004
- **Agent-Enabled Business Process Modeling.** Taught at Cadence Design Systems GmbH, January, 2004
- **Software Agents for Business Process Modelling and Management in Micro-economic Systems.** Tutorial at VII [Ukrainian National Conference on the Problems of Economical Cybernetics \(PEC'2002\)](#), Sept. 11-13, 2002.

## MANAGERIAL EXPERIENCE

- 01.1997 – ongoing: **the founer and the head** of Intelligent Systems Research Group at Zaporizhzhya National University, Ukraine
- 09.2000 – 07.2003: **Deputy President** of Zaporizhzhya State University (IT, Networking, Computing), Zaporizhzhya, Ukraine  
**Duties:** Department co-ordination, project management, project planning & development, hardware & software maintenance co-ordination, university-wide network implementation, maintenance and administration management, classes & research supply.
- 04.1992 – 09.2000: **Managing Director** of University Computing Centre, Zaporizhzhya State University, Zaporizhzhya, Ukraine  
**Duties:** Management, Project planning & development, hardware & software maintenance co-ordination, university-wide network implementation, maintenance and administration management, classes & research supply.

## COMMUNITY SERVICES:

### Editorship and Reviews for Journals and Book Series

- **Editor** of the [Open Journal of Semantic Web \(OJSW\)](#) - an open access online journal published by [Research Online Publishing](#)
- **Associate Editor** of the Journal of [Information technologies in Education \(ITE\)](#) - published by [Kherson State University](#)
- Member of the **Editorial Review Board** for the [International Journal of Web Services Research \(JWSR\)](#) - a [journal](#) published by [Idea Group Publishers](#)
- Member of the international **Editorial Advisory Board** of the Advances in Web Services Research (AWSR) Book Series, [Idea Group Publishers](#)
- Member of the **Editorial Board** of the [Journal of Service Science, Management, Engineering and Technology \(JSSMET\)](#) - [Idea Group Publishers](#)
- **Conscientious Reviewer** of [Integrated Computer-Aided Engineering](#)
- **Reviewer** for the Special Issue of the [International Journal of Artificial Intelligence Tools \(IJAIT\)](#), 2011
- **Reviewer** for the [IEEE Intelligent Systems, Sp. Issue on AI in Space](#) (Sep/Oct 2010)
- **Reviewer** for the [Computer Science and Information Systems \(COMSIS\)](#) Journal, 2010, Sp. Issue on Intelligent Distributed Computing, ComSIS Consortium
- **Reviewer** for the [International Journal of Computer Applications in Technology \(IJCAT\)](#), 2009, [Inderscience Publishers](#)
- **Reviewer** for the [Transactions of Knowledge and Date Engineering \(TKDE\)](#)
- **Reviewer** for the [International Journal of Agent-Oriented Software Engineering \(IJAOSE\)](#), Special Issue on [Software Agents in e-Business: Concepts, Development and Applications](#), 2008
- **Reviewer** for the [Multiagent and Grid Systems - an International Journal, Special Issue on Engineering Semantic Agent Systems](#), 2007
- **Reviewer** for IEEE COMPUTER [Special Issue on Web Services Computing](#) 2004

### Conference/Workshop Organization

- **Tutorials chair** of the 11<sup>th</sup> Int Conf on **ICT in Education, Research, and Industrial Applications (ICTERI 2015)**, Lviv, Ukraine, May. 14 - 16, 2015
- **PC co-chair** of the 10<sup>th</sup> Int Conf on **ICT in Education, Research, and Industrial Applications (ICTERI 2014)**, Kherson, Ukraine, Jun. 18 - 21, 2014



- **PC co-chair** (with Nick Bassiliades) of the 4<sup>th</sup> Int Conf on **Web Intelligence, Mining and Semantics** ([WIMS 2014](#)), Thessaloniki, Greece, June 2-4, 2014
- **Workshops Co-chair** (with M. Grobelnik) 3<sup>d</sup> Int Conf on **Web Intelligence, Mining and Semantics** ([WIMS 2013](#)), Madrid, Spain, June 12 - 14, 2013
- **PC Co-chair** (with H. C. Mayr) 9<sup>th</sup> Int Conf on **ICT in Education, Research, and Industrial Applications** ([ICTERI 2013](#)), Kherson, Ukraine, Jun. 19 - 22, 2013
- **PC Co-chair** (with H. C. Mayr) 8<sup>th</sup> Int Conf on **ICT in Education, Research, and Industrial Applications: Integration, Harmonization, and Knowledge Transfer** ([ICTERI 2012](#)), Kherson, Ukraine, June 6-10, 2012
- **Organizer** (with C. Badica and V. Terziyan) 1<sup>st</sup> Int W-shop on **Dynamics and Evolution in Intelligent Systems** ([DEIS 2012](#)), Kherson, Ukraine, Jun. 8, 2012
- **Co-chair** (with H. Mayr, M. Nikitchenko, A. Spivakovsky, M. Zavileysky, G. Zholtkevych) 7<sup>th</sup> Int Conf on **ICT in Education, Research, and Industrial Applications: Integration, Harmonization, and Knowledge Transfer** ([ICTERI 2011](#)), Kherson, Ukraine, May 5-7, 2011
- **Co-chair** (with J.M. Gomez-Perez, P. Haase, P. Warren) 2<sup>nd</sup> Int W-shop on **Context, Information And Ontologies** ([CIAO 2010](#)) at [EKAW 2010](#), Lisbon, Portugal, Oct. 11 - 15, 2010
- **Co-organizer** (with W.-E. Matzke): Special Session on **Performance in Industrial Holonic Systems** ([PiHols](#)) at 3<sup>d</sup> Int Conf on [Industrial Applications of Holonic and Multi-Agent Systems](#) Sept. 3-5, 2007, Regensburg, Germany in conjunction with [DEXA 2007](#)

### Program Committees (2013-14)

- 2<sup>nd</sup> Int Conf on **Model-Driven Engineering and Software Development** ([MODELSWARD 2014](#)), Lisbon, Portugal, Jan. 7 - 9, 2014
- 10<sup>th</sup> Int Conf on **Web Information Systems and Technologies** ([WEBIST 2014](#)), Barcelona, Spain, April 3-5, 2014
- Technical Track the **Semantic Web and Applications** ([SWA](#)) at the [29<sup>th</sup> Annual ACM Symposium on Applied Computing](#), Gueongju, Korea, March 24 - 28, 2014
- 17<sup>th</sup> Int Conf on **Business Information Systems** ([BIS 2014](#)), Larnaca, Cyprus, May 21-23, 2014
- 11<sup>th</sup> **Extended Semantic Web Conference** ([ESWC 2014](#)), Anissaras, Crete, Greece, May 25-29, 2014
- 4<sup>th</sup> Int Conf on **Web Intelligence, Mining and Semantics** ([WIMS 2014](#)), Thessaloniki, Greece, June 2-4, 2014
- 4<sup>th</sup> Int Workshop on **Applications of Software Agents** ([WASA 2014](#)), Thessaloniki, Greece, June 2-4, 2014
- 10<sup>th</sup> Int Conf on **ICT in Education, Research, and Industrial Applications** ([ICTERI 2014](#)), Kherson, Ukraine, Jun. 18 - 21, 2014
- 8<sup>th</sup> Int **Web Rule Symposium** ([RuleML 2014](#)), Prague, Czech Republic, Aug. 18-20, 2014
- 8<sup>th</sup> Int Symposium on **Intelligent Distributed Computing** ([IDC 2014](#)), Madrid, Spain, Sept. 3 - 5, 2014
- 6<sup>th</sup> Int Conf on **Computational Collective Intelligence** ([ICCCI 2014](#)), Seoul, Korea, Sept. 24-26, 2014
- Technical Track the **Semantic Web and Applications** ([SWA](#)) at the [28<sup>th</sup> Annual ACM Symposium on Applied Computing](#), Coimbra, Portugal, March 18 - 22, 2013
- 9<sup>th</sup> Int Conf on **Web Information Systems and Technologies** ([WEBIST 2013](#)), Aachen, Germany, May 8 - 10, 2013
- 10<sup>th</sup> **Extended Semantic Web Conference** ([ESWC 2013](#)), Montpellier, France, May 27 - 30, 2013
- 3<sup>d</sup> Int Conf on **Web Intelligence, Mining and Semantics** ([WIMS 2013](#)), Madrid, Spain, June 12 - 14, 2013
- 9<sup>th</sup> Int Conf on **ICT in Education, Research, and Industrial Applications** ([ICTERI 2013](#)), Kherson, Ukraine, Jun. 19 - 22, 2013
- 16<sup>th</sup> Int Conf on **Business Information Systems** ([BIS 2013](#)), Poznań, Poland, Jun. 19 - 21, 2013
- 7<sup>th</sup> Int **Web Rule Symposium** ([RuleML 2013](#)), Seattle, USA, Jul. 11-13, 2013
- 7<sup>th</sup> Int Symposium on **Intelligent Distributed Computing** ([IDC 2013](#)), Prague, Czech Republic, Sept. 4 - 6, 2013
- 5<sup>th</sup> Int Conf on **Computational Collective Intelligence Technologies and Applications** ([ICCCI 2013](#)), Sept. 11-13, 2013, Craiova, Romania

### Service for the European Commission

**Registered expert** in the: EU [Sixth Research Framework Program](#), EU [Seventh Research Framework Program](#), [EU Framework Program for Research and Innovation \(Horizon 2020\)](#)

Project reviews:

- **DIP**: Data, Information, and Process Integration with Semantic Web Services (<http://dip.semanticweb.org/>), IP, FP6, IST – involved as a reviewer
- **MUSING**: Multi-Industry Semantic-Based Business Intelligence (<http://www.musing.eu/>), IP, FP6 IST – involved as a reviewer
- **SMARTPRODUCTS**: Proactive Knowledge for Smart Products (<http://www.smartproducts-project.eu/>), IP, FP7, ICT – involved as a reviewer, rapporteur

Proposal evaluations:

- **FP7 ICT call 1**, objective “Intelligent Content & Semantics” – involved as a proposal evaluator
- **FP7 ICT call 3**, objective “Intelligent Content & Semantics” – involved as a proposal evaluator
- **FP7 ICT call 5**, objective “Intelligent Information Management” – involved as a Call rapporteur
- **FP7 ICT call 6**, objective “Digital Libraries” – involved as a rapporteur
- **FP7 ICT call 8**, objective “Intelligent Information Management” – involved as a Call rapporteur
- **FP7 ICT call 10**, objective “Intelligent Information Management” – involved as a Call rapporteur
- **FP7 ICT call 11**, objective “Intelligent Information Management” – involved as a Call rapporteur
- **H2020 ICT calls 15, 17, 22a** – involved as a Call rapporteur

## LIST OF SELECTED PUBLICATIONS<sup>2</sup>

The publications are listed in the reversed chronological order. The prefixes in the numbers are introduced to distinguish publication types: B – a book or a book chapter; J – a journal paper; C – a conference paper; W – a workshop paper; I – invited paper or talk; E – electronic publication; R – a technical report; T – a tutorial; M – a manual. The numbers are used for references elsewhere in the CV.

### BOOKS (edited collections)

- B1. **Akerkar, R., Bassiliades, N., Davies, J., Ermolayev, V.** (Eds.): Proceedings of the 4th International Conference on Web Intelligence, Mining and Semantics (WIMS 14), ACM, 2014
- B2. **Ermolayev, V., Mayr, H.C., Nikitchenko, M., Spivakovsky, A., Zholtkevych, G.** (eds.): Information and Communication Technologies in Education, Research and Industrial Applications. 9th International Conference, ICTERI 2012, Kherson, Ukraine, June 19-22, 2013, Revised Selected Papers, Springer Verlag, Berlin-Heidelberg, CCIS Vol. 412, 2013, XII, 379 p.
- B3. **Ermolayev, V., Mayr, H.C., Nikitchenko, M., Spivakovsky, A., Zholtkevych, G., Zavileysky, M., Kravtsov, H., Kobets, V. and Peschanenko, V.** (eds.): ICT in Education, Research and Industrial Applications. Proc. 9th Int. Conf. ICTERI 2013, Kherson, Ukraine, June 19-22, 2013, CEUR-WS.org/Vol-1000, ISSN 1613-0073, urn:nbn:de:0074-1000-9
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## REFEREED WORKSHOP PAPERS

- W1. **Ermolayev, V., Copylov, A., Keberle, N., Jentsch, E., Matzke, W.-E.**. Using Contexts in Ontology Structural Change Analysis.. In: Ermolayev, V., Gomez-Perez, J.-M., Haase, P., Warren, P, (eds.) CIAO 2010, CEUR-WS, vol. 626 (2010)
- W2. **Ermolayev, V., Ruiz, C., Tilly, M., Jentsch, E., Gomez-Perez, G. M., Matzke, W.-E.**: A Context Model for Knowledge Workers. In: Ermolayev, V., Gomez-Perez, J.-M., Haase, P., Warren, P, (eds.) CIAO 2010, CEUR-WS, vol. 626 (2010)
- W3. **Ermolayev, V., Keberle, N., Matzke, W.-E.**: An Ontology of Environments, Events, and Happenings. In: Proc 31<sup>st</sup> IEEE Annual International Computer Software and Applications Conference (COMPSAC 2008), Turku, Finland, Jul. 28 - Aug. 1, 2008, 539-546

- W4. **Keberle, N., Litvinenko, Yu., Gordeyev, Yu., Ermolayev, V.,**: Ontology Evolution Analysis with OWL-MeT. In: Flouris, G., d'Aquin, M. (Eds.): Proc of the Int Workshop on Ontology Dynamics (IWOD'2007) at European Semantic Web Conference (ESWC), June 7, 2007, Innsbruck, Austria, pp 1-12.
- W5. **Ermolayev, V., Jentzsch, E., Karsayev, O., Keberle, N., Matzke, W.-E., Samoylov, V.**: Modeling Dynamic Engineering Design Processes in PSI. In: J. Akoka et al. (Eds.): ER Workshops 2005, Proc. Seventh International Bi-Conference Workshop on Agent-Oriented Information Systems (AOIS-2005), Klagenfurt, Austria, October 24-28, Springer LNCS 3770, pp. 119 – 130, 2005.
- W6. **Ermolayev, V. Keberle, N., Tolok, V.** (2002). OIL Ontologies for Collaborative Task Performance in Coalitions of Self-Interested Actors. In: H. Arisawa, Y. Kambayashi, V. Kumar, H.C. Mayr, I. Hunt (Eds.): Conceptual Modeling for New Information Systems Technologies ER 2001 Workshops, HUMACS, DASWIS, ECOMO, and DAMA, Yokohama Japan, November 27-30, 2001. Revised Papers - LNCS vol. 2465, p. 390-402

## INVITED PAPERS/TALKS

- I1. **Ermolayev, V., Matzke, W.-E., Sohnius, R.**: Engineering Design Performance (Extended Abstract). Invited Talk. In: Kaschek, R., Kop, C., Steinberger, C. and Fliedl, G. (Eds.) Information Systems and Business Technologies. Proc. 2nd Int. Conf. UNISCON 2008, Apr. 22 – 25, 2008, Klagenfurt, Austria, LNBIP Vol. 5, 108-110.
- I2. **Ermolayev, V., Spivakovsky, A., Zholtkevych, G.** (2004) UnIT-NET IIIDE : Infrastructure nationale ukrainienne pour l'intraechange de donnees electroniques. Institut Universitaire de Technologie Nice-Cote d'Azur. Universite Nice-Sophia Antipolis. Colloque National de la Recherche Universitaire dans les I. U. T. Actes de Colloque, Tome 1. Sciences et Techniques de l' Ingenieur, Nice, May, 6-7, 2004, p. 113-121.
- I3. **Ermolayev, V. A., Tolok, V. A., Maksishko, N. G.** On Opportunities to IT Research Integration and IT Curriculum Improvement in European Frameworks. In: Proc. of the 5-th Scientific-Methodological Conference "Economic Cybernetics: the Problems of Methodology", Kiev, Dec. 1999, 14 pp. (Ukrainian)
- I4. **S. U. Borue, V. A. Ermolayev, V. A. Tolok**: On Diacoptical Approach to Process Modelling in Multifunctional Information Systems. in: Proc. of International Conference Knowledge - Dialog - Solution (KDS'99). Katsiveli, 13-18.09.1999, pp. 211-219, (Russian)

## TUTORIALS

- T1. **Ermolayev, V., Davidovsky, M.**: Ontology Alignment and Applications in 90 Minutes. Tutorial Paper. Proc. 9th Int Conf. ICTERI 2013, Kherson, Ukraine, June 2013, CEUR-WS vol. 1000, pp. 295-306, [ceur-ws.org/vol-1000/](http://ceur-ws.org/vol-1000/)
- T2. **Ermolayev, V., Davidovsky, M.**: Agent-Based Ontology Alignment: Basics, Applications, Theoretical Foundations, and Demonstration. Tutorial Paper. In: Dan Burdescu, D., Akerkar, R., and Badica, C. (eds.) Proc. Int Conf on Web Intelligence, Mining and Semantics (WIMS 2012), Craiova, Romania, 13-15 Jun. 2012, pp. 11-22, ACM, 2012, doi>[10.1145/2254129.2254136](https://doi.org/10.1145/2254129.2254136)
- T3. **Ermolayev, V., Gorodetski, V., Jentzsch, E., Matzke, W.-E.**: Modeling and Simulation of Dynamic Engineering Design Processes. Tutorial at ER 2005. In: J. Akoka et al. (Eds.): ER Workshops 2005, Klagenfurt, Austria, October 24-28, Springer LNCS 3770, pp. 470 – 472, 2005.

## e-ARTICLES

- E1. **Ermolayev, V.** (2003) RACING: Agent-Mediated Web Service Composition for Rational Information Retrieval. e-Article on [KTweb Community Portal](http://www.kept.lu/doc/article11.pdf), May 2003, 5 p. URL: <http://www.kept.lu/doc/article11.pdf>

## SELECTED PROJECT DELIVERABLES/TECHNICAL REPORTS

- R1. **Ermolayev, V., Jentzsch, E., Keberle, N., and Sohnius, R.**: Performance Simulation Initiative. The Suite of PSI Ontologies v.2.0. Reference Specification. Technical Report PSI-ONTO-TR-2006-1, 17.05.2007, VCAD EMEA Cadence Design Systems, GmbH, 84p.
- R2. **Ermolayev, V., Jentzsch, E., Keberle, N., and Sohnius, R.**: Performance Simulation Initiative. The Family of PSI Ontologies v.1.6. Reference Specification. Technical Report PSI-ONTO-TR-2006-4, 26.07.2006, VCAD EMEA Cadence Design Systems, GmbH, 77p.
- R3. **Ermolayev, V., Jentzsch, E., Keberle, N., Samoylov, V., and Sohnius, R.**: Performance Simulation Initiative. The Family of PSI Ontologies v.1.5. Reference Specification. Technical Report PSI-ONTO-TR-2006-3, 14.04.2006, Cadence Design Systems, GmbH, 56 p.
- R4. **Ermolayev, V., Jentzsch, E., Keberle, N., Samoylov, V., Sohnius, R.**: The Family of PSI Ontologies v.1.4. Reference Specification. Technical Report PSI-ONTO-TR-2006-2. Cadence Design Systems, GmbH, 47 p., 2006
- R5. **Ermolayev, V., et al**: PSI: Conceptual Ability Framework Specification. Draft. Internal Report No: TR-PSI-2-2006 Version 0.1. January, 2006
- R6. **Ermolayev, V., Jentzsch, E., Matzke, W.-E., Schmidt, J., Schroeder, G., Weber, S., Werner, J.**: Agent-Based Dynamic Engineering Design Process Modeling Framework. Technical Report. Cadence Design Systems, GmbH, 29 p., 2004.

- R7. **Ermolayev, V.:** State of the Art in Agent-Based Modeling and Simulation of Design Processes. Technical Report. Cadence Design Systems, GmbH, Mozartstr. 2 D.85622 Feldkirchen, Germany, 2004, 25 p
- R8. **Ermolayev, V., Bulat, A., Gray, E., Keberle, N., Plaksin, S., Shapar, V., Vladimirov, V., Zholtkevich, G.:** The Infrastructure for Electronic Data Interchange. Reference Architecture Specification. Version 1.0. UNIT-NET Project Deliverable No D2.2.D.1.
- R9. **Borue, S. U., Ermolayev, V. A., Keberle, N. G., Plaksin, S. L., Tolok, V. A.** (2002) Formal and Algorithmic Framework for a Rational Information Retrieval Agency. Technical Report on Research Project (Grant No 0102Y005339 of Ministry of Education and Science of Ukraine), Zaporizhzhya State Univ., Zaporizhzhya, 2002, 50 p.
- R10. **Ermolayev, V. A., Borue, S. U., Tolok, V. A., Keberle, N. G., Plaksin, S. L.** (2002) Arranging Cooperative Business Activities in Dynamic Coalitions of Rational Actors. Tech. Report: Zaporizhzhya State University, Zhukovskogo, 66, 69063, Zaporizhzhya, Ukraine, May, 2002, 33 pp.
- R11. **S. R. Lyakh, V. A. Ermolayev, F. G. Turchenko, V. O. Maslennikov, E. N. Goloschapov, A. V. Bilay, A. I. Korobov, I. A. Ogneva:** Electronic Encyclopedia "History of Ukrainian Cossacks. Final Report on Research Project (Grant No 0100Y001735 of Ministry of Education and Science of Ukraine), Zaporizhzhya State Univ., Zaporizhzhya, 2001, 201p.(Ukrainian)
- R12. **S. U. Borue, V. A. Ermolayev, N. G. Keberle, V. V., Mikhailichenko, S. L. Plaksin, V. A. Tolok** Formal Principles and Methods of Interaction of the Models of the Functional Objects in the Unified University Information Space. Intermediate Report on Research Project (Grant No 0197y012776 of Ministry of Education and Science of Ukraine), Zaporizhzhya State Univ., Zaporizhzhya, 2000, 49 p. (Ukrainian)
- R13. **V. A. Ermolayev, V. A. Tolok, S. U. Borue:** Decomposition, Projection Models and Design Framework for the Components of Unified University Information Space. Tech. Report on Research Project (Grant No 0197y012776 of Ministry of Education of Ukraine), Zaporizhzhya State Univ., Zaporizhzhya, 1999, 48 p. (Russian)
- R14. **V. A. Tolok, S. U. Borue, V.A. Ermolayev:** Design of the Architecture of University Unified Information Space and the Concept of Regional Inter-University Network. Tech. Report on Research Project (Grant No 0197y012776 of Ministry of Education of Ukraine), Zaporizhzhya State Univ., Zaporizhzhya, 1998, 48 p. (Ukrainian)
- R15. **V. A. Tolok, S. U. Borue, V.A. Ermolayev:** Design of the Concept and Implementation of the First Phase of ZSU Integrated Network. Tech. Report on Research Project (Grant No 0197y012776 of Ministry of Education of Ukraine), Zaporizhzhya State Univ., Zaporizhzhya, 1997, 28 p. (Ukrainian)
- R16. **V.A. Ermolayev:** CT technology information Data Model. Project Development Report, Charmilles Technologies SA, CH-1217 Meyrin Geneve Switzerland, 1995.
- R17. **V.A. Ermolayev:** Active Meta-Data Repository System for Adaptable Data Base Application Design. PhD Thesis. Zaporizhzhya State University, 1994

## SOFTWARE MANUALS

- M1. **V. A. Ermolayev,** CT Techno Cookee. CT technologies DB Management System. User's Guide. Charmilles Technologies SA, CH-1217 Meyrin Geneve Switzerland, 1995, 84 p.
- M2. **V. A. Ermolayev,** CT Techno Cookee. CT technologies DB Management System. Maintenance Manual. Charmilles Technologies SA, CH-1217 Meyrin Geneve Switzerland, 1996, 196 p.

## TEXTBOOKS AND TEACHING MATERIALS

1. **V. Ermolayev** Semantic Web Technologies. Electronic teaching materials. Zaporizhzhya, ZSU, 2012, URL: <http://kit.znu.edu.ua/iLec/9sem/SWT/>
2. **V. Ermolayev** Introduction to Logic Programming and AI. Electronic teaching materials. Zaporizhzhya, ZSU, 2010, URL: <http://kit.znu.edu.ua/iLec/7sem/LPAI/>
3. **V. A. Ermolayev, O. R. Onischuk:** Computer Software. Data Structures and Algorithms. Zaporizhzhya, ZNU, 2005, 60p.
4. **V. A. Ermolayev** Agent Technologies on the Semantic Web. Electronic teaching materials. Zaporizhzhya, ZSU, Jyvaskyla, Univ. of Jyvaskyla, 2005, e-Book URL: <http://ermolayev.com/asw/>
5. **V. A. Ermolayev** Knowledge Bases and Expert Systems. Electronic teaching materials. Zaporizhzhya, ZHUSMG, 2005, e-Book URL: <http://virtuni.education.zp.ua/lib/program/eva/OKB/e-book/>
6. **V. A. Ermolayev** Agent-Enabled e-Business Technologies. Electronic teaching materials. Zaporizhzhya, ZSU, Klagenfurt, Univ. of Klagenfurt, 2003, e-Book URL: <http://www.zsu.zp.ua/ameb/>
7. **V. A. Ermolayev** Computer Software. Algorithms for Sorting and Search. Zaporizhzhya, ZSU, 2000, 154 p. (Russian). e-Book URL: <http://www.znu.edu.ua/lab/MathDep/ApMath/SWPCII/kurs.html>
8. **V. A. Ermolayev** Computer Software. Basic Algorithms and Data Structures. Zaporizhzhya, ZSU, 1999, 119 p. (Russian). e-Book URL: <http://www.znu.edu.ua/lab/MathDep/ApMath/SWPCI/kurs.html>



9. **V. A. Ermolayev** Architectures of OS and DBMS. Zaporizhzhya, ZSU, 1998, 76 p. (Russian). e-Book URL: <http://www.znu.edu.ua/lab/mathdep/apmath/arcsosdbms/>
10. **V. A. Ermolayev** Programming Technology. Zaporizhzhya, ZSU, 1997, 76 p. (Russian). e-Book URL:
11. **V. A. Ermolayev** Contemporary Software Systems. Part IV: Contemporary DBMS. Zaporizhzhya, ZSU, 1997, 32 p. (Russian)
12. **V. A. Ermolayev** Contemporary Software Systems. Part III: Operation Shells APIs and Interfaces. Zaporizhzhya, ZSU, 1997, 48 p. (Russian)
13. **V. A. Ermolayev** Contemporary Software Systems. Part II: Decktop Publishing and WWW. Zaporizhzhya, ZSU, 1997, 45 p. (Russian)
14. **V. A. Ermolayev** Contemporary Software Systems. Part I: Basics of Architectures. Zaporizhzhya, ZSU, 1997, 30 p. (Russian)

## EVIDENCE OF EXTERNAL REPUTATION

### Individual Grants and Scholarships:

- A Young Scientist Scholarship of Swiss Academy of Engineering (Branco Weiss Foundation), 1994

### Invited Papers:

- Our journal paper "Towards a framework for agent-enabled semantic web service composition" [J11] has been invited for revision and publication as a book chapter in Zang, L.J. (Ed.) Modern Technologies in Web Services Research. IGI Publishing, Hershey New-York., 2006 [B12]
- Our AOIS@ER-2005 workshop paper "Modeling Dynamic Engineering Design Processes in PSI" [W5] has been invited for extension and publication as a book chapter in Kolp, M., Bresciani, P., Hendersen-Sellers, B., and Winikoff, M. (Eds.): Agent-Oriented Information Systems III. Revised Selected Papers, 2006 [B13]
- Our ICWS-Europe'2003 conference paper "Towards Agent-Based Rational Service Composition -- RACING Approach" [C28] has been invited for extension and publication in the inaugural volume of the Int. J. of Web Service Research, 2004 [J11].
- Our ISTA'2003 conference paper "Capturing Semantics from Search Phrases: Incremental User Personification and Ontology-Driven Query Transformation" [C29] has been invited for the publication in the Herald of NTU KhPI, Sp. Issue "System Analysis, Control, and IT", No 1, 2004 [J12]

### Invited Talks:

#### Keynotes at Conferences, Symposia, and Workshops:

- Engineering Design Performance. Invited talk at United Information Systems Conferences (UNISCON 2008), Klagenfurt, Austria, Apr. 22 – 25, 2008.
- Semantic Web Technologies in UnIT-Net Infrastructure for Electronic Data Interchange. UkrPROG'04, Kiev, 02 June, 2004
- Software Agents for Business Process Modelling and Management in Micro-economic Systems. VII Ukrainian National Conference on the Problems of Economical Cybernetics (PEC'2002), Zaporizhzhya, Ukraine, Sept. 11-13, 2002
- Development of Information Resources in Regional Scientific and Educational Networks. Int. Symposium on Contemporary IT for Libraries and Management of Scientific and Educational Networks. Kiev, Oct. 2001
- Evolving Agent Communities for Intelligent Information Processing in WEB-Based Enterprise-Wide Information Systems. Int. Conf. on Intelligent Information Processing (IIP'2000), Crimea, Ukraine, 12-16 June 2000

### Talks at Academic Institutions:

- Towards Cooperative Distributed Service Composition on the Semantic Web. IFI, University of Klagenfurt, Austria, 06.02.2003
- Dynamic Agent Coalitions for Mediating EC B2B Activities. Division of Mathematics and Computer Science, Vrije University Amsterdam, 04.2001

- Active Data Dictionary Approach in Database Application Design. Seminar of the Institute of Informatics, Umea University, Sweden, Nov. 1993.

Invited Panels:

- Do we need an Ontology of Ontologies? Panel discussion at ER'2002, Tampere, Finland, 10.10.2002 (together with Nicola Guarino, Heinrich Mayr (Mod.), John Morris, Jari Palomäki, Bernhard Thalheim, Yair Wand)