CV of Prof. Dr. Dmitry A. Zaitsev

ORCID ID: 0000-0001-5698-7324
Scopus Author ID: 14046420700
ResearcherID: F-9343-2016
Senior Member of ACM and IEEE
E-mail: daze@acm.org
Web-site: http://daze.ho.ua
Mobile: +44 7585815942
Affiliation: The University of Derby, the UK
Web-site: https://www.derby.ac.uk/

Education:

- 1981-1986 Donetsk Polytechnic Institute (DPI), Applied Mathematics, MS.
- 1988-1991 post graduate course, DPI, Computer Science
- 1991 Academic Council of Kiev Cybernetics Institute Ac.Sci. Ukraine, Ph.D., Automated Control
- 2006 Academic Council of Odessa National Academy of Telecommunications (ONAT), Dr.Sci. (HDR), Telecommunication Systems and Networks

Training courses:

- 1986 System Programmer of RSX11M (DEC), LIMTU, St.Petersburg
- 1994 Organisation of Business in HiTech, RPI (USA) in Kiev
- 1995 Internet and Web Technology, DEC in Apatity, Russia
- 2002 Administration of Modern OS and DBMS, DIIT, Dnepropetrovsk, Ukraine

Jobs:

- 1986-1996 DPI, Department of Applied Mathematics and Informatics (AMI): 1986-1992 assistant professor, 1992-1996 associate professor; chief programmer in software development projects; system programmer; computer network administrator
- 1997-1998 Surgut State University, Department of Computer Science and Informatics, associate professor; chief of Network Technology Laboratory
- 1999-2003 Information and Computer Centre of Odessa Railway, leader engineer
- 2002-2006 ONAT, Department of Communication Networks, associate professor
- 2006-2009 Professor
- 2009-2019 International Humanitarian University, Department of Computer Engineering, professor
- 2014-2019 Vistula University, Warsaw, Department of Computer Science, professor
- 2019- Odessa State Environmental University, department of Information Technology, professor
- 2020- Fundación Centro de Supercomputación de Castilla y León, Senior Research Affiliate
- 2021- University of Information Technology and Management in Rzeszów, Poland, professor

Visiting Jobs:

- March 2005 University Paris-Dauphine, invite professor
- July-August 2015 Technical University of Dortmund, visiting professor, DAAD fellowship
- Autumn 2017 Innovative Computing Laboratory, University of Tennessee, USA, Visiting Professor, Fulbright Scholarship
- July 2018 Eindhoven University of Technology, Netherlands, Visiting Professor
- January 2019 Barcelona Supercomputing Center, Visiting Professor (Erasmus+ Scholarship)
- April-July 2022 Johannes Kepler University Linz, Austria, Institute of Telecooperation, visiting professor, JESH fellowship
- August 2022 – November 2023, I3S Laboratoire d'Informatique, Signaux et Systèmes de Sophia Antipolis, Université Côte d'Azur, Nice, France, visiting professor

- December 2023 – January 2024, Department of Computer Science, Darmstadt University of Technology, Germany, visiting professor

Principal Theoretical Results:

- Clans of systems of linear algebraic equations, their simultaneous and parallel-sequential composition
- Sleptsov net computing
- Explicit construction of Universal Sleptsov/Petri Nets
- Analysis of Infinite Petri Nets with regular structure (linear, square, hypercube)
- Generalized neighbourhood for cellular automata
- Compositional Analysis of Petri Nets based on Decomposition of Petri Net into Functional Subnets
- Functional equivalence and equivalent transformationsof timed Petri nets
- Timed Petri nets with multi-channel transitions, their state equation and partial invariants
- Synthesis of Continuous (fuzzy) Logic function given by table

Principal Scientific-Practical Results:

- ParAd – software system for solving big sparse Diophantine systems on parallel and distributed architecture via clan composition
- Plug-in modules for Petri net modelling system Tina: Deborah–decomposition into clans, Adriana and ParAd – compositional computing Petri net invariants
- Petri net models of networking protocols:TCP, BGP, IOTP, ECMA
- Software generators of Petri net models of grids: square, hypercube, hypertorus
- Colored Petri net models of networks: Ethernet, IP, MPLS, Bluetooth, PBB, E6
- Stack of networking protocols E6 and its implementation in Linux kerne
- Software systems: Opera-Topaz – Petri net based production control and management, Nevod – Petri net modeling systemfor embedded applications, Sergo – editor of electrical circuits

Supervising and mentoring activities:

- 2 Ph.D. students
- 28 Ms. students
- 12 Bc. Students

Editing and reviewing:

- Editor of International Journal of Parallel, Emergent and Distributed Systems, Teylor&Fransis since 2020
- Reviewer of: AMS Mathematical Reviews; Information Sciences; Fundamenta Informatica; Peer-to-Peer Networking and Applications; Journal of Automata, Languages, and Combinatorics; Evolving Systems; IEEE Access; IEEE Transactions on Systems, Man and Cybernetics: Systems; IEEE Transactions on Cybernetics; IMA Journal of Mathematical Control and Information.

Funding received:

- Short Term Scientific Mission, EU COST Action CA 16227: Investigation and Mathematical Analysis of Avant-Garde Disease Control Via Mosquito Nano- Tech Repellents, May 2021
- "Solving linear Diophantine systems via composition of their clans" – Fullbright scholarship, 2017
- "Security of model-driven software development" – DAAD fellowship, 2015
- "Analysis of computational grids efficiency via Colored Petri Nets" – Austria-Ukraine cooperation grant, 2013-2014
- "Production control with Petri nets" - China-Ukraine cooperation grant, 2011-2012
- "Developing New Addressing Systems for World-Wide Networks (E6)" – Ukraine state grant, 2008-2009
- "Verification of Complex Networking Protocols" – grant NATO ICS.NUKR.CLG 982698, 2007-2008
- "Simulating Backbone MPLS Networks" – Ukrtelekom corporation, 2007-2008

Recommendations:

- *https://www.linkedin.com/in/dmitry-a-zaitsev*

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