

# Zoltán Micskei | Curriculum Vitae

Born: 5 August 1982, Budapest, Hungary

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## Education

- **Ph.D. degree (summa cum laude)**  
○ *Budapest University of Technology and Economics* 2005–2008  
Dissertation: “Languages and frameworks for specifying test artifacts”, 2013
- **M.Sc. degree (with honor)**  
○ *Budapest University of Technology and Economics, Fault-tolerant Systems specialization* 2000–2005

## Positions

- **Associate professor (tenured):** Budapest University of Technology and Economics 2017–
- **Assistant professor:** Budapest University of Technology and Economics 2013–2017
- **Lecturer:** Budapest University of Technology and Economics 2009–2013
- **Research associate:** Budapest University of Technology and Economics 2008–2009
- **Associate consultant:** Microsoft Consulting Services Hungary 2005

## Research experience

*Research statement:* My main area is software testing, specializing in model-based and code-based test generation. My goal is to produce advanced, but practical testing tools and methods. I favor empirical research methods and open science principles.

### Selected publications.....

📖 Full list • 🔍 Google Scholar • 🏛️ MTMT

- L. Csepentő, Z. Micskei. “Evaluating code-based test input generator tools”, *Software Testing, Verification and Reliability (STVR)*, 27:6, pp. 1–24, 2017. doi 10.1002/stvr.1627
- Z. Micskei and H. Waeselynck. “The many meanings of UML 2 Sequence Diagrams: a survey”, *Software and Systems Modeling (SoSyM)*, 10:4, pp. 489-514, 2011. doi 10.1007/s10270-010-0157-9
- Z. Micskei, I. Majzik, H. Madeira, M. Vieira, N. Antunes, A. Avritzer. “Robustness Testing Techniques and Tools”, *Resilience Assessment and Evaluation of Computing Systems*, Springer, 2012. doi 10.1007/978-3-642-29032-9\_16

### Research datasets and tools.....

- **MBT:** dataset on model-based testing (MBT) and code-based test generation tools 📄
- **SEViz:** a tool for visualizing symbolic execution 🗣️
- **SETTE:** a framework for evaluating and comparing test input generator tools 🗣️

### Awards and scholarships.....

- **Scholarship for the Nation’s Young Talents:** National Talent Program (NTP-NFTÖ-16) 2016
- **Schnell László Prize:** Schnell László Foundation 2007
- **Scholarship of the Hungarian Republic:** Ministry of Education 2005

## Services to the community.....

I reviewed more than 50 papers as PC member for international conferences or as external reviewer for journals.

### Organizational Committee member

- o IEEE High Assurance Systems Engineering Symposium (HASE), *Panel co-chair* 2016
- o Int. Workshop on Software Engineering for Resilient Systems (SERENE), *Publicity chair* 2014

### Program Committee member

- o International Conference on Conceptual Modeling (ER) 2017–2018
- o International Conference on System Analysis and Modelling (SAM) 2018
- o International Conference on System Design Languages (SDL) 2017
- o International Workshop on Executable Modeling (EXE) 2015–2017
- o User Conference on Advanced Automated Testing (UCAAT) 2016
- o High Assurance Systems Engineering Symposium (HASE) 2016
- o European Dependable Computing Conference (EDCC) 2016
- o International Workshop on Software Certification (WoSoCer) 2014
- o International Conference on Testing Software and Systems (ICTSS) 2012–2014, 2016

### External reviewer for journals

- o ACM Transactions on Software Engineering and Methodology (TOSEM)
- o International Journal on Software and Systems Modeling (SoSyM)
- o Journal of Systems and Software (JSS)
- o IEEE Transactions on Reliability (TRel)
- o Software Quality Journal (SQJ)
- o International Journal of Critical Computer-Based Systems (IJCCBS)
- o Reliability Engineering & System Safety (RESS)

Moreover, I served as external reviewer for several conferences (FASE, DSN PDS, SAC DADS, SRDS, ASE...).

## Research projects.....


I'm constantly involved in large international projects or direct industry collaborations.

### International research projects

- o **Reconfigurable ROS-based Resilient Reasoning Robotic Cooperating Systems (R5-COP)** **Task leader**  
*EU ARTEMIS 621447, 30 partners, project total costs 13M €*  
2014–2017  
Led the development of a model-based regression testing method for autonomous systems.
- o **Resilient Reasoning Robotic Co-operating Systems (R3-COP)** **Researcher**  
*EU ARTEMIS 100233, 27 partners, project total costs 17.5M €*  
2010–2013  
Co-developed a method for generating test contexts for autonomous robots.
- o **Security Engineering for lifelong Evolvable Systems (SecureChange)** **Researcher**  
*EU FP7 231101, 15 partners, project total funding 5M €*  
2009–2010  
Coordinated the dissemination activities of the project.
- o **Highly DEpendable ip-based NETworks and Services (HIDENETS)** **Researcher**  
*EU FP6 026979, 8 partners, project total funding 2.5M €*  
2006–2008  
Co-developed TERMOS, a test requirement language for mobile systems. 📄
- o **Resilience for Survivability in IST (ReSIST)** **Researcher**  
*EU FP6 026764 Network of Excellence, 21 partners, project total funding 4.5M €*  
2006–2008  
We categorized the semantic choices and formal semantics proposed for UML 2 Sequence Diagrams. 📄

### Industrial R&D projects

- o **Verification of Complex Systems** **Lead**  
*Ericsson Hungary, Budapest, Hungary*  
2014–2015  
We analyzed executable UML languages (fUML, Alf) and their verification aspects.

- **Comparing Robustness of HA middleware** **Researcher**  
2005–2006  
Nokia Research Center, Finland  
Co-developed a method for comparing the robustness of AIS-based middleware. 

## Research visits.....

- **ResilTech** **Pontedera, Italy**  
2015–2016  
Visiting researcher at ResilTech, a spinoff of Univ. Firenze for 2 × 1 months.
- **CNRS-LAAS** **Toulouse, France**  
2006–2007  
Visiting researcher at the TSF group of CNRS-LAAS research laboratory for 6 × 1 months.

## Tutoring.....

- **PhD students:** Dávid Honfi (2015–2018), Ákos Hajdu (2016–2019)
- **Student scientific competition:** 3 × 2<sup>nd</sup> prize (Faculty level)
- **Thesis works:** I supervised 13 MSc and 17 BSc thesis works


## Membership in societies.....

- **ACM:** Association for Computing Machinery  2015–
- **NJSZT:** John von Neumann Computer Society 2013–

## Teaching experience

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I have 15+ years of teaching experience and have developed and taught several undergraduate and graduate courses. I regularly coordinate the work of 5–10 teaching assistants for my courses.

*Teaching statement:* I prefer to include collaborative, project-based elements in my courses and offer flexibility for the students in their learning experience. See for example my SWSV course. 

## Courses (highlights).....

- **Software and systems verification (SWSV)** **Lead instructor**  
2015–  
VIMIMA01, MSc, ~100 students  
Led and developed half of the material for the course about testing and test generation.
- **Intelligent system management** **Lead instructor**  
2009–2016  
VIMIA370, BSc, ~200 students  
Led and developed most of the materials for the course on scripting and design for manageability.
- **Virtualization technologies and their applications** **Lead instructor**  
2009–2012  
VIMIAV89, Elective, ~20 students  
Led and developed half of the materials on the different kinds of virtualization (platform, OS, application...)
- **Operating systems** **Instructor**  
2007–2015  
VIMIA219, BSc, ~400 students  
Developed the lecture and laboratory materials for the Windows and virtualization parts of the course.

## Teaching excellence.....

I regularly get high scores in student evaluations, I was in the TOP25 list of our university (~1000 faculty).

- **Excellent Young Teacher of the Faculty** 2016  
Student Council of the Faculty of Electrical Engineering and Informatics  
The 5000+ students of the Faculty vote for the best teacher among the 200+ faculty members in two categories.
- **Dean's Commendation** 2014  
Dean of the Faculty of Electrical Engineering and Informatics  
For outstanding teaching activities and developing excellent educational materials.
- **Best Young Teacher of the Department** 2011, 2012  
Schnell László Foundation  
Awarded to a young faculty of the department (60+ members) for outstanding teaching activities.

## Professional experience

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In the last 15 years I worked at different levels of the software and systems stack: ranging from configuring blade servers, managing VMware and Windows environments, debugging applications to doing .NET or web development.

### Trainings and consulting for companies.....

- **MBT:** I was one of the first to obtain an ISTQB Model-based Tester certification and I hold accredited trainings.
- **Unit testing:** Training about development testing, test design and mocking.
- **SysML/UML:** Introduction to modeling and model-based development with UML or SysML.

### Talks.....

I regularly speak at professional events to present testing topics or our research results.

- **Empirical Evidence in Software Testing**  
*Hungarian Software Testing Forum (HUSTEF), Budapest, Hungary, (Poster session)*  2017
- **Evaluating Code-Based Test Input Generator Tools**  
*User Conference on Advanced Automated Testing (UCAAT), Budapest, Hungary*  2016
- **Model-based testing: goals and use cases**  
*Software Testing Conference, Budapest, Hungary* 2016
- **The Gap Between Academic Research and Industrial Practice in Software Testing**  
*Hungarian Software Testing Forum (HUSTEF), Budapest, Hungary*  2014
- **Generating Unit Tests Automatically from Source Code**  
*Test&Tea meetup, Budapest, Hungary*  2014
- **Testing Autonomous Systems in an EU Project**  
*Software Testing Conference, Budapest, Hungary* 2012
- **Using Model-based Testing in a Research Project**  
*Software Testing Conference, Budapest, Hungary* 2011