Personal information

Name / Surname	**Oszkár Semeráth**
Personal Email	semerath@mit.bme.hu
Home page	https://oszkarsemerath.github.io/
Nationality	Hungarian
Date of birth	March 6, 1988

Language

Mother tongue	**Hungarian**
English	B2 degree, 2009
German	B1 degree (writing/reading), 2019

Education

PhD in Software Engineering 2014–2019	Budapest University of Technology and Economics Department of Measurement and Information Systems. Honour: *summa cum laude*, Thesis work: *Formal Validation and Model Generation for Domain-Specific Languages by Logic Solvers* Supervisor: Prof. Dániel Varró
MSc in Software Engineering 2011–2014	Budapest University of Technology and Economics, Specialization: Safety-Critical System Engineering. Thesis work: *Consistency Analysis of Domain-Specific Languages*
BSc in Software Engineering 2007–2011	Budapest University of Technology and Economics, Specialization: Information Technology. Thesis work: *Formal Analysis of Model Transformations* (*Hun*)
High school 2007	Török Ignác High School, math specialization

Positions

2021 –	Assistant Professor, Budapest University of Technology and Economics
2020 – 2021	Research Fellow, Budapest University of Technology and Economics
2019 – 2020	Research Fellow, MTA-BME Lendület Cyber-Phisical Systems Research Group
2016 – 2019	Research Assistant, MTA-BME Lendület Cyber-Phisical Systems Research Group
2016 – 2019	3×2 months Graduate Research Trainee, McGill University, Canada
2014 – 2016	PhD student, Budapest University of Technology and Economics

Awards and Scholarships

2013	IEEE/ACM Best Paper Award, MODELS2013 (*International, 1 out of 48 papers*)
2017, 2020, 2021	3× New National Excellence Program (ÚNKP) (*National scholarship, presentation selected and advertised on the official channel of the university*)
2018, 2020	2× László Schnell Publication Award (*Departmental*)
2021	Josef Heim Innovation Award (*Departmental*)
2022	Young Researcher Award (*National Academy of Science, 22 awards*)
2016	Best Presentation Award, CSCS Conference (*National*)
2011, 2013, 2014	Student Research Competition (TDK): university 1^{st}, 2^{nd}, national 1^{st} places

Publication Record

Summary	1 book chapter, 7 journal papers (IF), 17 conference papers
Repositories	Hungarian Scientific Bibliography (10045161), Google Scholar
Citations	180 independent citations, selected citations: *IEEE Transactions on Software Engineering*, *IEEE Access (1,2)*, Empirical Software Engineering
Conference presentations	Eindhoven (The Netherlands), Saint-Malo (France), Marburg (Germany), Gothenburg (Sweden), Thessaloniki (Greece), Montreal (Canada)
Hungarian presentations	*Software Testing 2021, Budapest,* `https://www.iir-hungary.hu/` *Formal Methods in Information Technology*, Eszterházy Károly Catholic University, 2021
Selected publications	[1] Semeráth, Nagy, Varró: *A Graph Solver for the Automated Generation of Consistent Domain-Specific Models.* International Conference on Software Engineering, 2018. *Citations: 20* (*Previous paper from Hungarian authors was accepted 22 years ago*) [2] Semeráth, Barta, Horváth, Szatmári, Varró: *Formal Validation of Domain-Specific Languages with Derived Features and Well-Formedness Constraints.* Software and System Modeling, 2017. *Citations: 20* [3] Semeráth, Varró: *Iterative Generation of Diverse Models for Testing Specifications of DSL Tools.* Fundamental Approaches to Software Engineering, 2018. *Citations: 11* [4] Semeráth, Varró: *Graph Constraint Evaluation over Partial Models by Constraint Rewriting.* International Conference on Model Transformation, 2017. *Citations: 11* [5] Marussy, Semeráth, Varró: *Automated Generation of Consistent Graph Models with Multiplicity Reasoning.* IEEE Trans. on Software Engineering, 2021. *IF: 9.321* (*Previous paper from Hungarian authors was accepted 12 years ago*)

Resaerch Projects

2022	Amazon Research Award, co-Principal Invisigator (*International, 74 winners*)
2021 – 2022	Research Collaboration with a railway supplier (*Testing of AI-based systems*)
2020 – 2021	Research collaboration with Component (*AI-based manufacturing and cost estimator for engineering blueprints*)
2020 – 2021	"Competetiveness and Excellence Collaboration" program, Prolan, (*systematic generation of railway architecures for the testing of railway switches*)
2018 –	Higher Education Excellence Program, NRDI Fund (*AI/Future mobility research*)
2014 – 2016	"Verification of Complex Systems" collaboration, Ericsson Hungary
2013	Artemis R3-COP research project (*Testing of laser-guided autonomous forklift robots*)

Research Visits

2021	ZalaZONE (*Zalaegerszeg, Hungary, autonomous vehicle test track*)
2019	Karr Lab (*New York, USA, molecular simulation for cancer research*)

Teaching and Talent Care

2020 –	Lead lecturer: *Model-based Systems Design* *Critical Architectures Laboratory* *Critical Systems Integration Laboratory* *Project Laboratory, BSc and MSc Thesis Projects* (*150+ students*)
2013 – 2019	Teaching and Lab Assistant: *System Modeling, Eclipse-Based Development and Integration, Critical Architectures Laboratory, Critical Systems Integration Laboratory, Formal Methods, Model Driven Software Development, System Integration, Languages and Automata*
Supervising	15 under- and postgraduate students, 1 ongoing PhD student
Student Research Competition	8 thesis works, 6 awards (*Hungary*) *Special award for the supervision of best woman researcher*
Research Programs	5 co-supervised *Summer Undergraduate Research* projects, (*McGill, Canada*)
Teaching Award	Departmental award for the development of automated homework generation and evaluation framework (*System Modeling, annually 600+ students, three languages*)

Academic Service

Reviewing	20+ conference reviews (including *BIS2020, ECMFA2018, 4×FASE, 2×ICGT, 2×ICMT 2×MODELS, SEFM2019, SLE2015* konferenciákat) 4 journal review (*J. Syst. Softw., Int. J. Softw. Tools Technol. Transf., Concurr. Comput. Pract. Exp.*)
2019–	Student research competition reviewing/scoring (*National/University level*)
2016	Local chair at Minisymposium conference (*Departmental*)
2013	Student volunteer at STAF2013 research conference (*International*)