Kristóf Marussy

Curriculum Vitæ

Education

Doctoral School of Informatics, *February 2018–January 2022, Defended: June 2023*
Budapest University of Technology and Economics (BME)
- Advisor: Dr. István Majzik

Computer Engineering MSc, BME *February 2016–January 2018*

Computer Engineering BSc, BME *September 2012–January 2016*

Professional experience

Assistant professor, *January 2025–*
Critical Systems Research Group, Department of Artificial Intelligence and Systems Engineering,
Budapest University of Technology and Economics, Hungary
- Integrating AI-based technologies with graph-based logic reasoning to improve Positioning, Timing and Navigation solutions in the *VAMPIR* project of the European Space Agency
- Discovering and quantifying the impact of simulators on the validation process of AI components in the *AiSimEval* basic research project funded by ONR Global

Research fellow, *February 2023–December 2024*

Assistant research fellow, *February 2020–February 2023*
Critical Systems Research Group, Department of Measurement and Information Systems,
Budapest University of Technology and Economics, Hungary
- Formally verified *critical subsystems* in the railway and automotive domains in Hungarian national projects collaborating with Prolan Zrt. (2018-1.3.1-VKE-2018-00040) and thyssenkrupp Ltd. (2019-1.3.1-KK-2020-00004)
- Developed *Refinery*, a cloud-based graph model and test data generator in the research project "Graph solver as a service" supported by the *2022 Amazon Research Award*

Assistant research fellow, *February 2018–December 2019*
MTA-BME Lendület Cyber-Physical Systems Research Group
- Investigated case studies from the automotive, railway, and aerospace (NASA JPL) domains
- Proposed model-based dependability verification techniques for cyber-physical production systems in the EFOP-3.6.2-16-2017-00013 project

Research trainee, **BioIntelligence Research Group,** *September 2014–June 2015*
Institute of Genomic Medicine and Rare Disorders, Semmelweis University, Budapest, Hungary
- Developed semi-supervised classification algorithms for EEG time series data in the Hungarian national project OTKA 91269 "BioMining: Machine Learning for Biomedical Tasks"

Talks and research visits

Tutorial at the **MODELS '24 Conference,** Linz *September 2024*
CORE ranking A software engineering conference

Tutorial at the **FAME Summer School,** Linz *September 2024*

Invited talk at the **LowCoMote Industrial Workshop** (Budapest) *December 2022*

Graduate Research Trainee, **McGill University,** Montreal, Canada, *October 2022, May–June 2019*
Department of Electrical and Computer Engineering (Prof. Dániel Varró)

Invited talk at the **Linked Data Benchmark Council** (LDBC) Technical User Group *June 2022*
Meeting Workshop at the ACM SIGMOD 2022 conference (remote)

Research visit at the **University of L'Aquila,** Italy,   *March 2019*
Department of Electrical and Computer Engineering (Prof. Vittorio Cortellessa)

Teaching and mentoring

Course coordinator, Critical Systems Laboratory   *February 2024–*
- Hands-on laboratory course for MSc students on the design, verification, deployment, and maintenance of critical distributed services

Teaching assistant, BME   *2014 September–January 2022*
- Courses at the Department of Measurement and Information Systems (including *Formal Methods, Software Engineering*) and at the Department of Computer Science and Information Theory (including *Probability Theory, Algorithms*)

Supervised 7 × BSc, 4 × MSc student thesis works and numerous Hungarian Scientific Students' Association research works (5 × 1st prize, 5 × 2nd prize, 1 × 3rd prize, 1 × merit at the university level, 1 × 2nd prize, 1 × 3rd prize, 1 × merit and the national level)

Academic service

Reviewer for journals including *Empirical Software Engineering, Software and Systems Modeling, Science of Computer Programming, Journal of Logical and Algebraic Methods in Programming*

Review Committee member at the OOPSLA '25 (CORE ranking A* programming languages conference), FASE '25, LLM4MDE '24 conferences

Extended Review Committee member at OOPSLA '23 and ECOOP '23 and '22 (CORE ranking A)

Artifact Evaluation Committee member at OOPSLA '23, ECOOP '23 and '22, FASE '24 and '23, ESOP '22

Sub-rewiever at ACM SAC, DDECS, DEPCOS, DSN, FASE, FTSCS, iFM, MODELS, and QEST conferences

Scholarships and awards

Junior Príma "Hungarian Sciences" Award   *2025*
- Awarded by the *Hungarian Development Bank* to 10 young researchers per year who, through their outstanding work in their respective fields, contribute to the development of Hungarian science and to value creation

University Researcher Scholarship Programme (EKÖP)   *2024 (postdoc)*
- Awarded by the *National Research, Development and Innovation Office* (NRDI) of Hungary to approximately 2000 recipients per year (formerly ÚNKP)

New National Excellence (ÚNKP) scholarship   *Won 4 times*
- Won in 2016 (MSc), 2018 (PhD student), 2021 (PhD candidate), and 2023 (postdoc)

Josef Heim Innovation Award   *2023*
- Awarded by the *László Schnell Foundation* to 1 member of the *Department of Measurement and Information Systems* per year for exceptional work in innovation

OOPSLA Distinguished Artifact Reviewer Award   *2021*
- Awarded by the *ACM Object-Oriented Programming, Systems, Languages & Applications* (OOPSLA 2021) conference to 2 members of the Artifact Evaluation Committee

László Schnell Publication Award   *2021*

László Schnell Award   *2020*
- Awarded by the *László Schnell Foundation* to 1 member of the *Department of Measurement and Information Systems* per year for exceptional work in research

Hungarian National Higher Education Scholarship   *September 2013–January 2018*
- Awarded to up to 0.8% of Hungarian university students based on merit in studies and research

Language skills

Hungarian: *native*   English: *fluent, advanced (CEFR C1) certification*   French: *threshold (CEFR B1)*

Selected publications

- **Kristóf Marussy**, Attila Ficsor, Oszkár Semeráth, and Dániel Varró. "Refinery: Graph Solver as a Service". In: *46th International Conference on Software Engineering.* ACM, 2024. DOI: 10.1145/3639478.3640045
  - Published in leading software engineering conference, **CORE ranking: A***
  - Tool demonstration and more information: https://conf.researchr.org/details/icse-2024/icse-2024-demonstrations/23/Refinery-Graph-Solver-as-a-Service
  - Independent citations: 2
- Boqi Chen, **Kristóf Marussy**, Sebastian Pilarski, Oszkár Semeráth, and Dániel Varró. "Consistent Scene Graph Generation by Constraint Optimization". In: *37th IEEE/ACM International Conference on Automated Software Engineering.* ACM, 2022. DOI: 10.1145/3551349.3560433
  - Published in leading software engineering conference, **CORE ranking: A***
  - Independent citations: 1
- **Kristóf Marussy**, Oszkár Semeráth, and Dániel Varró. "Automated Generation of Consistent Graph Models with Multiplicity Reasoning". In: *IEEE Trans. Softw. Eng.* 48.5 (2022), pp. 1610–1629. DOI: 10.1109/TSE.2020.3025732
  - Published in leading software engineering journal, **impact factor: 7.4**
  - Independent citations: 3
- Márton Búr, **Kristóf Marussy**, Brett H. Meyer, and Dániel Varró. "Worst-Case Execution Time Calculation for Query-Based Monitors by Witness Generation". In: *ACM Trans. Embed. Comput. Syst.* 20.6 (2021), pp. 1–36. DOI: 10.1145/3471904. arXiv: 2102.03116 [cs.SE]
  - Independent citations: 2
- **Kristóf Marussy**, Oszkár Semeráth, Aren A. Babikian, and Dániel Varró. "A Specification Language for Consistent Model Generation based on Partial Models". In: *J. Obj. Technol.* 19.3, 12 (2021). DOI: 10.5381/jot.2020.19.3.a12
  - Independent citations: 5
- **Kristóf Marussy**, Oszkár Semeráth, and Dániel Varró. "Incremental View Model Synchronization Using Partial Models". In: *Proceedings of the 21th ACM/IEEE International Conference on Model Driven Engineering Languages and Systems.* ACM, 2018, pp. 323–333. DOI: 10.1145/3239372.3239412
  - Independent citations: 6
- **Kristóf Marussy** and Krisztián Buza. "SUCCESS: A New Approach for Semi-supervised Classification of Time-Series". In: *ICAISC 2013.* LNCS 7894. Springer, 2013, pp. 437–447. DOI: 10.1007/978-3-642-38658-9_39
  - Independent citations: 32

All publications

DBLP	https://dblp.org/pid/130/6479.html
Google Scholar	https://scholar.google.com/citations?user=E9CKNYoAAAAJ
Hungarian Science Bibliography (MTMT)	https://m2.mtmt.hu/gui2/?type=authors&mode=browse&sel=10062709
h-index	7
Independent citations	147