Olek Osikowicz

amosikowicz1@sheffield.ac.uk olek-osikowicz.github.io olek-osikowicz olek-osikowicz

Education

PhD **University of Sheffield**, Computer Science — Sheffield, UK — Sept 2023 – present

- **Simulation-based testing of Autonomous Driving Systems (ADS)**
- Applied machine learning to accelerate scenario-based ADS verification
- Developed Multi-Fidelity Bayesian Optimization framework for ADS testing
- Diagnosed and reduced flaky ADS tests caused by simulator nondeterminism
- Appointed as Research Assistant facilitating international collaboration
- Contributed to open-source ADS testing frameworks and tools

BSc **University of Sheffield**, Computer Science — Sheffield, UK — Sept 2020 – June 2023

- Graduated with First-Class Honours
- Disertation: *Autonomous Driving Systems Testing - grounded in reality test generation*

Publications

Multi-Fidelity Bayesian Optimization for Simulation-Based Autonomous Driving Systems Testing — June 2025

Olek Osikowicz, Phil McMinn, Wei Xing, Donghwan Shin

Manuscript under review at the 2026 IEEE Intelligent Vehicles Symposium (IV 2026)

Empirically Evaluating Flaky Tests for Autonomous Driving Systems in Simulated Environments — Apr 2025

Olek Osikowicz, Phil McMinn, Donghwan Shin

eprints.whiterose.ac.uk/222933 *2025 IEEE/ACM International Flaky Tests Workshop (FTW 2025)*

Teaching

Software Re-Engineering — Mar 2024 – present

Supporting undergraduate and master's students in re-engineering real-world Python projects.

Introduction to Algorithms and Data Structures — Feb 2023 – June 2023

Running tutorial sessions for first-year students, explaining the principles of modern algorithms and data structures.

Working Experience

University of Sheffield, Research Assistant in Simulation-Based Testing — Sheffield, UK — June 2025 – present

- Developing automated Python tooling for large-scale ADS simulation and testing
- Project: "Simulation-Based Testing for Mobility Cyber-Physical Systems of Systems"

Dover Fueling Solutions, Summer Intern — Kraków, Poland — June 2022 – Sept 2022

- Built and validated automated data pipelines on Microsoft Azure
- Worked with SQL warehouses and Databricks for scalable data processing

Skills

Automation: Building distributed computing pipelines with Python multiprocessing, Docker, Ray, AWS, and GCP; observability with Loki, Prometheus, and Grafana

Programming: Python for backend automation, ML, and visualization (Pandas, PyTorch, Matplotlib); Svelte and React for frontend development

Mathematics: Strong foundation in calculus, linear algebra, and statistics