# Olek Osikowicz

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## 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
- Applied multi-fidelity Bayesian Optimization to reduce ADS testing costs
- Built multi-node distributed systems for large-scale experiment evaluation
- Diagnosed and reduced flaky ADS tests caused by simulator nondeterminism
- 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