

Olek Osikowicz

✉ amosikowicz1@sheffield.ac.uk [olek-osikowicz.github.io](https://github.com/olek-osikowicz) [olek-osikowicz](https://www.linkedin.com/company/olek-osikowicz) [olek-osikowicz](https://www.linkedin.com/company/olek-osikowicz)

Education

- PhD** **University of Sheffield**, School of Computer Science Sheffield, UK
• Efficient and reliable simulation-based Autonomous Driving Systems testing Sept 2023 – present
• *PhD Supervisors: Donghwan Shin & Phil McMinn*
- BSc** **University of Sheffield**, Computer Science Sheffield, UK
• Graduated with **First-Class Honours** Sept 2020 – June 2023
• Dissertation: *Grounded In Reality Autonomous Driving Systems Testing*

Current Projects

- Distributed ML infrastructure**
- Designed and deployed a multi-node computing cluster using Ray to parallelize software-in-the-loop evaluations
 - Significantly improved the throughput of ML evaluation experiments in testing research group
- Multi-Fidelity Test Generation**
- Designed Multi-Fidelity Bayesian Optimization algorithms for Autonomous Driving Systems (ADS) testing
 - Reduced costs of driving models evaluation by 16.8% compared to state-of-the-art baselines
- Variational Autoencoder (VAE) for Driving Scenarios**
- Implemented a deep learning pipeline to learn compact latent representations of driving scenarios
 - Designed, trained and evaluated the model enabling efficient sampling of driving scenarios for ADS testing
- Flaky Test Analysis for ADS**
- Empirically discovered and analysed the causes of flaky tests in simulation-based ADS testing
 - Reported and published mitigation guidelines to reduce the impact of flaky tests on ADS verification

Employment

- University of Sheffield**, Research Assistant in Simulation-Based Testing Sheffield, UK
• Developing automated Python tooling for large-scale ADS simulation and testing June 2025 – present
• Project: "Simulation-Based Testing for Mobility Cyber-Physical Systems of Systems"
- Dover Fueling Solutions**, Summer Intern Kraków, Poland
• Built and validated automated ETL data pipelines on Microsoft Azure June 2022 – Sept 2022
• Worked with SQL warehouses and Databricks for scalable data processing

Skills

- Programming:** Python (Expert), C++, SQL, TypeScript
- Distributed computing:** Ray, Docker, AWS (EC2/S3), GCP, SLURM, Multiprocessing, with Loki, Prometheus, Grafana
- Machine Learning:** Bayesian Optimization, VAEs, Reinforcement Learning in PyTorch, Pandas, Scikit-Learn

Publications

- Multi-Fidelity Bayesian Optimization for Simulation-Based Autonomous Driving Systems Testing** June 2025
Olek Osikowicz, Phil McMinn, Wei Xing, Donghwan Shin
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
[10.1109/FTW66604.2025.00009](https://doi.org/10.1109/FTW66604.2025.00009) [arXiv:2504.00009](https://arxiv.org/abs/2504.00009) *2025 IEEE/ACM International Flaky Tests Workshop (FTW 2025)*