# MIHAI-GEORGE LICU

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**EDUCATION ETH Zurich** 

MSc in Computer Science

Zurich, Switzerland Sep 2024 - Present

**University of Bucharest** 

Bucharest, Romania

BEng in Computer Science

Sep 2020 - Jul 2024

#### **WORK ETH Zurich**

Zurich, Switzerland

**EXPERIENCE** Research Assistant

Aug 2025 - Present

- Extended a Python/Java pipeline that generates synthetic populations to run agent-based transport simulations, adapting its modules to process new geographical data.
- Automated the generation of geospatial visualizations from simulation data, providing key metrics for urban planning analysis using geopandas.

**CERN** Geneva, Switzerland

Security Engineer Intern

Jun 2023 - Sep 2023

- Overhauled a critical security scanner by migrating its codebase from Python 2 to Python 3 and integrating Kerberos SSO authentication, enabling automated detection across 1000+ previously unscannable web applications.
- · Contributed to a live incident response effort by performing forensic analysis on attacker-provided artifacts (source code, logs) to assist in post-breach investigation.
- Authored a detailed technical report on the viability of a unified YubiKey authentication system. analyzing FIDO2 protocol limitations and OS-level integration challenges for SSH across the complete Linux, macOS, and Windows ecosystem.

**Deutsche Bank** Bucharest, Romania Mar 2023 - Aug 2023

Software Engineer Intern

automated all builds, testing, and deployments.

- · Accelerated development for a new internal training platform built with Java Spring Boot and React serving 1500+ employees by architecting a complete CI/CD pipeline on Google Cloud Platform that
- Improved user retention and engagement for the platform by engineering its primary notification microservice with Google Cloud Functions, delivering event-driven communications.

**ETH Zurich** Zurich, Switzerland Jul 2022 - Aug 2022

Research Assistant

- Engineered a portable, **Docker**-based lab environment for a graduate-level Systems Security course, providing 200+ students with a consistent platform for hands-on exercises in memory corruption, static/ dynamic analysis, and sandboxing.
- · Wrote a series of targeted benchmarks against a novel WebAssembly sandbox that leverages Intel Memory Protection Keys to analyze its performance and stability.

# **PERSONAL PROJECTS**

## fabridyne | Rust

- · Developed a cycle-accurate, out-of-order superscalar processor simulator in Rust, capable of executing a subset of the **RISC-V** instruction set.
- · Modeled a complete microarchitecture, including a 32-entry reservation station, register renaming, and precise exception handling to manage data hazards and ensure correct state.

## Sound Synth | C++

 Built a real-time, polyphonic audio synthesizer leveraging the SDL2 library for low-latency, crossplatform audio processing and event handling. The synthesis engine features multiple waveform oscillators, dynamic ADSR amplitude envelopes, and a collection of distinct virtual instruments.

**SKILLS** Programming Languages: Python, C++, Rust, Java, C, Go, JavaScript

Developer Tools: Docker, Linux, GCP, Git, Kubernetes, IDA Pro, Wireshark, Burp Suite