Matthew Edwin Weingarten

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linkedin.com/in/matt-weingarten google scholar

EDUCATION

Columbia University, New York NY, Electrical Engineering, PhD, **September 2024 - Present**
ETH Zurich, Zurich CH, Computer Science D-INFK, MS, **May 2023**
ETH Zurich, Zurich CH, Computer Science D-INFK, BS, **February 2021**

PROFESSIONAL EXPERIENCE

Google (25%) – Student Researcher, Tools, Architecture and Optimization, Dr. Snehasish Kumar, **September 2024 - June 2025**
Google – Student Researcher, Tools, Architecture and Optimization, Dr. Snehasish Kumar, **April 2024 - September 2024**
ETH Zurich, – Scientific Assistant, Systems Group, Dr. Timothy Roscoe, **June 2023 - October 2023**
Oracle Labs – Compiler Research Intern, GraalVM, Dr. Aleksandar Prokopec, **June 2021 - September 2022**

PUBLICATIONS

1. **M. E. Weingarten**, T. A. Khan. "Towards Open-Source and Automatic Performance Characterization Hardware", RISC-V Europe Summit '25. *To Appear*
2. **M. E. Weingarten**, N. Hossle, T. Roscoe. "High Throughput Hardware Accelerated CoreSight Trace Decoding". In Proceedings of 2024 Design, Automation & Test in Europe Conference & Exhibition (DATE'24).
3. **M. E. Weingarten**, T. Theodoridis, A. Prokopec. "Inlining-Benefit Prediction with Interprocedural Partial Escape Analysis". In Proceedings of the 14th ACMSIGPLAN Int Workshop on Virtual Machines and Intermediate Languages (VMIL'22)

TALKS

1. **RISC-V Europe Summit '25** "Towards Open-Source and Automatic Performance Characterization Hardware" *To Appear*
2. **Google Performance Summit '24**
3. **DATE'24**, "High Throughput Hardware Accelerated CoreSight Trace Decoding"
4. **VMIL'22**, "Inlining-Benefit Prediction with Interprocedural Partial Escape Analysis"

PATENTS

1. A. Prokopec, **M. E. Weingarten**, P. Woegerer, C. Wimmer. "Program Execution using Interprocedural Escape analysis with Inlining". *Pending*

THESES

1. **Master thesis**, "Hardware Accelerated Trace Analysis for Compiler Optimizations", Dr. Nora Hossle & Dr. Timothy Roscoe
2. **Bachelor thesis**, "Static Single-Assignment IR for Strict Functional Languages", Dr. Tobias Grosser & Dr. Zhendong Su

TEACHING

1. **Computer Architecture**, Dr. Tanvir Ahmed Khan, CSEE4824, **February 2025 - May 2025**
2. **HW/SW Co-design for Datacenters**, Dr. Tanvir Ahmed Khan, E6894, **September 2024 - December 2024**
3. **Big Data**, Dr. Ghislain Fourny, **September 2022 - January 2023**
4. **Computer Systems**, Dr. Timothy Roscoe, **September 2020 - January 2022**

STATUS

1. USA and Switzerland Citizenship
2. English & German Native Speaker
3. Military Service, Swiss Army, **June 2023, October 2022, July 2018, March 2017 - August 2017**