Muhammed Ugur

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Education

Yale University — New Haven, CT
Ph.D. in Computer Science — *Aug. 2022 – Present*

University of Michigan — Ann Arbor, MI
M.S. in Computer Science and Engineering; GPA: 4.00/4.00 — *Sep. 2020 – May 2021*

University of Michigan — Ann Arbor, MI
B.S. in Computer Science with Honors, Minor in Mathematics; GPA: 3.84/4.00 — *Sep. 2016 – May 2020*
Thesis: *Feasibility of Client-side Browser Script Rewriting* — Advisor: *Prof. Harsha Madhyastha*

Research

Areas: Computer Architecture, Operating Systems, Compilers, Machine Learning
Topics: Profile-guided Optimizations, Hardware/Software Co-Design, Brain-Computer Interfaces

Conference Publications

[1] *Whisper: Profile-Guided Branch Misprediction Elimination for Data Center Applications*, Tanvir Ahmed Khan, **Muhammed Ugur**, Krishnendra Nathella, Dam Sunwoo, Heiner Litz, Daniel A Jiménez, and Baris Kasikci **[MICRO 2022]**
Best Paper Award Winner

Journal/Workshop Publications

[1] *One Profile Fits All: Profile-Guided Linux Kernel Optimizations for Data Center Applications*, **Muhammed Ugur**, Cheng Jiang, Alex Erf, Tanvir Ahmed Khan, and Baris Kasikci **[OSR 2022]**

[2] [Workshop + Poster] *Understanding Branch Prediction in Data Center Applications*, **Muhammed Ugur**, Tanvir Ahmed Khan, Dam Sunwoo, Krishnendra Nathella, Daniel A. Jiménez, and Baris Kasikci, The Fourth Young Architect Workshop **[ASPLOS 2022]**

[3] [Workshop + Poster] *Multi-Application Linux Kernel Profile*, **Muhammed Ugur**, Tanvir Ahmed Khan, and Baris Kasikci, Student Research Competition at 42nd ACM SIGPLAN Conference on Programming Language Design and Implementation **[PLDI 2021]**

Experience

Department of Computer Science, PhD — New Haven, CT
Graduate Student, Yale University; Advisor: *Prof. Abhishek Bhattacharjee* — *Aug. 2022 – Present*
- **Systems & Architecture**: Designing low-power, multi-accelerator systems for brain-computer interfaces

Computer Science and Engineering, EfesLab — Ann Arbor, MI
Research Assistant, University of Michigan; Advisor: *Prof. Baris Kasikci* — *March 2021 – July 2022*
- **Systems & Architecture**: Optimized the Linux kernel and branch prediction for data center applications
- **Machine Learning Systems**: Profiled popular DL libraries and ML models to determine key bottlenecks

Clinc Inc. — Ann Arbor, MI
Software Engineer — *June 2019 – Feb. 2021*
- **Full-Stack**: Developed new crowdsourcing infrastructure and services for NLP platform

Center for Healthcare Engineering and Patient Safety — Ann Arbor, MI
Research Assistant, University of Michigan; Advisor: *Prof. Amy Cohn* — *May 2018 – May 2019*
- **Full-Stack**: Built web platform to manage surgical instruments for Michigan Medicine

Department of Biostatistics — Ann Arbor, MI
Research Assistant, University of Michigan; Advisor: *Prof. Hui Jiang* — *Oct. 2017 – Apr. 2018*
- **Genomics**: Analyzed costly algorithms for differential gene expression

Programming Skills

Languages: C/C++, Python, Rust, Shell Scripting, JavaScript, Go
Miscellaneous: Docker, Git, Linux perf, Intel TopLev, PyTorch, TensorFlow, MLPerf, DALI, LLVM