

Muhammed Ugur

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EDUCATION

Yale University

Ph.D. in Computer Science

New Haven, CT

Aug. 2022 – Present

University of Michigan

M.S. in Computer Science and Engineering

Ann Arbor, MI

Sep. 2020 – May 2021

University of Michigan

B.S. in Computer Science with Honors, Minor in Mathematics

Ann Arbor, MI

Sep. 2016 – May 2020

Thesis: *Feasibility of Client-side Browser Script Rewriting*

Advisor: *Prof. Harsha Madhyastha*

RESEARCH

Areas: Computer Architecture, Operating Systems, Compilers, Programming Languages, Machine Learning

Topics: Hardware/Software Co-Design, Accelerators, Brain-Computer Interfaces, Profile-guided Optimizations

Conference Publications

- [1] *SCALO: An Accelerator-Rich Distributed System for Scalable Brain-Computer Interfacing*, Karthik Sriram, Raghavendra Pradyumna Pothukuchi, Michal Gerasimiuk, **Muhammed Ugur**, Oliver Ye, Rajit Manohar, Anurag Khandelwal, and Abhishek Bhattacharjee [**ISCA 2023**]
- [2] *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

Graduate Student, Yale University; Advisor: Prof. Abhishek Bhattacharjee

New Haven, CT

Aug. 2022 – Present

- **Systems & Architecture:** Designing low-power, multi-accelerator systems for brain-computer interfaces

Computer Science and Engineering, EfesLab

Research Assistant, University of Michigan; Advisor: Prof. Baris Kasikci

Ann Arbor, MI

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

Clinic Inc.

Software Engineer

Ann Arbor, MI

June 2019 – Feb. 2021

- **Full-Stack:** Developed new crowdsourcing infrastructure and services for NLP platform

Center for Healthcare Engineering and Patient Safety

Research Assistant, University of Michigan; Advisor: Prof. Amy Cohn

Ann Arbor, MI
May 2018 – May 2019

- **Full-Stack:** Built web platform to manage surgical instruments for Michigan Medicine

Department of Biostatistics

Research Assistant, University of Michigan; Advisor: Prof. Hui Jiang

Ann Arbor, MI
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, LLVM