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RESEARCH INTEREST

Human Computer Interaction, Human-AI Collaboration, Computer Supported Collaborative Work, Data Annotation, Social HCI

EDUCATION

University of Notre Dame 01/2022 - Present
Ph.D. of Computer Science Notre Dame, USA

- Advisor: Prof. Toby Jia-Jun Li

Addis Ababa Institute of Technology 10/2016 - 10/2021
Bachelor of Science Addis Ababa, Ethiopia

- Major: Software Engineering
- Honor: Addis Ababa University 2021 Great Distinction

RESEARCH PROJECTS

Human-AI Collaboration for Qualitative Data Analysis 01/2022 - Present

Co-leading student researcher,

Collaborators: Zheng Zhang, Xiaohang Tang, Yihao Meng, Elena Glassman, and Toby Li

- Developed a thematic analysis tool for qualitative data analysis that accounts for the dynamic and iterative nature of inductive qualitative research.
- Took a program synthesis approach to facilitate a model to learn codes and patterns within a dataset while optimizing the learning of a human
- Conducted usability tests to investigate the effectiveness of the system and compare the trade offs of different interaction strategies
- Conducted a medium sized Mechanical Turk study to investigate the usefulness and effectiveness of the system and compare the trade offs of different interaction strategies

Random Forest Based AI Classifier and Explainer 05/2020 - 10/2020

Student researcher,

Collaborators: Aymen J. Ahmed, Andrew McCrab, and Prof. Valeria Bertacco

- The goal of this project was to boost the performance of a Random Forest based classification explainer by developing hardware and software solutions. To this end: we worked on the data layout, on ad-hoc data structures and on designing dedicated hardware acceleration blocks.
- Researched and experimented with different data layout and data structure designs, as well as designing and implementing graph traversals for acceleration blocks.

Composable Benchmarking 05/2020 - 10/2020

Student researcher,

Collaborators: Aymen J. Ahmed, Pete Ehreet, and Prof. Valeria Bertacco

- The 2030 decade will rely on very advanced and specialized computing capabilities, executing several complex algorithms at high performance, to enable applications ranging from virtual and augmented reality, complex classifications and explainable ML-based decisions, and data analyses at a much more advanced level than it is possible today.
- The goal of this project is to 1) develop and adapt core algorithms from those future domains to create benchmarks for computing system researchers, 2) design a synthetic, parametric benchmark generator that produces additional benchmarks resembling the same type of workloads.
- Designed and implemented synthetic, parametric benchmark generator.

WORK EXPERIENCE

Graduate Teaching Assistant

01/2022 - Present

University of Notre Dame

- Work as a teaching assistant to the courses Human-Computer Interaction and Computer Architecture. As a teaching assistant I hold office hours, advise students and grade exams and papers.

Research Assistant

05/2020 - 02/2021

University of Michigan

- Worked as a research assistant at the University of Michigan with Professor Valeria Bertacco as my faculty advisor. I worked on computer architecture projects namely Composable Benchmarking and redesigning memory for faster explainable-AI.

Teaching Assistant

05/2018 - 12/2018

Girls Can Code

- Coordinated and assisted in a program hosted by X-hub Addis that was working to help girls in high school get into tech before reaching higher education and joining the university.

GRANTS & HONORS

Delta Analytics Global Teaching Fellow	2021
GRIESHMA Research Scholar at Indian Institute of Technology-Chennai	2020
First place winner at Oracle's Back to school Ethiopia hackathon	2019
Certified IBM blockchain developer- Mastery Award	2018

LANGUAGES & SKILLS

Program Languages:	Python, Java, Javascript, SQL, Kotlin
UX Skills:	Qualitative Research, Experiment Design, User Study
Database:	MySql, NoSql, Oracle
Languages:	English – Fluent, Tigrigna – Native, Amharic – Native