SIMRET ARAYA GEBREEGZIABHER

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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.
- Designed and developed a creation tool that enables amateur users to interactively generate and manipulate 3D spatial audio effects in videos that only had monaural or stereo audio (System built based on React)

Composable Benchmarking   05/2020 - 10/2020
Student researcher,
Collaborators: Aymen J. Ahmed, Andrew McCrab, 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.

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

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, C, Kotlin
UX Skills:	Qualitative Research, Experiment Design, User Study
Database:	MySql, NoSql, Oracle
Languages:	English – Fluent, Tigrigna – Native, Amharic – Native