Lia Ahmed-Zaid
Computer Science and Engineering

Hardworking and ready to learn, looking for work in computer engineering, software development, or any related disciplines where I can contribute to creative solutions to solve real problems!

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Saline, Michigan 📍

EXPERIENCE

Photon Semantics, Data Collection Specialist
Ann Arbor, MI, April 2024 - Present (Part-time)

◈ Worked on implementation of LIDAR computer vision technology for improved material analysis and identification through machine learning.
◈ Assisted with creation and implementation of systems for data collection as well as programming for truthing and data classification for neural network training purposes.
◈ Duties included software development, data collection under precise conditions, and rigorous documentation of processes.
◈ Gained proficiency working with LIDAR software, neural networks, data collection, processing, and documentation, as well as experience working with an independent engineering team to turn a proof of concept into a prototype for demonstration.

Virginia Tech Transportation Institute, CS Summer Intern (Division of Data Science)
Blacksburg, VA, July 2023 - Sep 2023

◈ Worked with the data science programming team of VTTI to manage processing algorithms for large amounts of data gathered by LiDAR.
◈ Included research work related to neural networks and object detection algorithms for vehicle safety features and development of automated driving systems.
◈ Duties involved solving key problems related to sensor tracking, 3D scene perception, and machine learning to construct virtual environments.
◈ Gained proficiency working with high-level technical tools such as Pulsar and GPUs and professional work-sharing programs like Docker Desktop.

Washtenaw Community College, Digital Arts/Computer Trainer
Ann Arbor, MI, June 2022 - Aug 2022

◈ Served as an instructor for multiple Black Rocket youth summer camps themed around video games, digital arts, and STEM education for young children.
◈ Duties include planning curriculum and conducting class, working with children ages 7-14. Class content included STEM topics such as electrical circuitry and software engineering through game development.
◈ Gained proficiency working in a high-stress environment and fostering communication and cooperation between students, as well as teaching engineering concepts.

University of Michigan, Community Center Assistant
Ann Arbor, MI, October 2021 - May 2024

◈ Worked as part of the University's Housing department providing service to students, directing and assisting with problems and questions. Included mailroom duties.

MMI Engineering Solutions, Press Operator
Saline, MI, May 2021 - Aug 2021

◈ Worked as part of an assembly line at an injection molding facility, learned about the design, CAD modeling, tooling, casting processes involved in manufacturing.

EDUCATION

<u>UNIVERSITY OF MICHIGAN COLLEGE OF ENGINEERING</u>
B.S.E in COMPUTER SCIENCE
Minor in DIGITAL STUDIES
Ann Arbor, Michigan, May 2025

RELATED COURSES

◇ (EECS 370) Computer Architecture and Organization
◇ (EECS 494) Computer Game Design and Development
◇ (EECS 481) Software Engineering
◇ (EECS 493) User Interface Design
◇ (EECS 486) Information Retrieval and Web Search
◇ (EECS 492) Intro to Artificial Intelligence
◇ (EECS 376) Foundations in Computer Science
◇ (EECS 281) Data Structures and Algorithms
◇ (EECS 280) Programming and Intro to Data Structures
◇ (TCHCM 497) Advanced Technical Communication for CS
◇ (ENGR 100) Engineering Underwater Vehicle Design
◇ (MECHENG 250) Design and Manufacturing
◇ (STATS 250) Statistics and Data Analysis
◇ (MATH 214) Applied Linear Algebra
◇ (DIGI 201) Digital Media Creation with Python
◇ (MUSPERF 300) Video Game Music
◇ (DIGI 201) Digital Culture
◇ (DIGI 394) Virtual Reality

SKILLS

<u>Platforms/Operating Systems:</u> Linux (proficient), Windows (proficient), Mac (intermediate)

<u>Languages:</u> C/C++ (proficient), Python (proficient), HTML (proficient), CSS (proficient), Java (proficient), Assembly (LC2K, ARM/LEG v8) (proficient), ISA (ARM/LEG v8) (basic), Ruby (basic), XML (basic), bash (basic), Matlab (basic)

<u>Applications:</u> Jira (proficient), Autodesk Inventor (proficient), AutoCAD (proficient), Blender (proficient), Solidworks (proficient), OnShape (proficient), Ultimaker Cura (proficient), Github (intermediate), Unity (proficient), Unreal Engine (proficient), Microsoft Excel (proficient), Audacity (proficient), Bandlab (proficient), VS code (proficient), Ubuntu (proficient), Powershell (proficient), Matlab (proficient), JGrasp (proficient), Dr.Java (proficient), OBS studio (intermediate), Adobe Cloud (proficient), Photoshop (proficient), Premier (intermediate), Krita (proficient), Eclipse (basic), Powerpoint (proficient), Docker Desktop (intermediate), Pulsar (intermediate)

PROJECTS

◈ Computer architecture projects including an LC-2K assembler and simulator, pipelined processor, and cache simulator. (2025)
◈ Developed a system combining sentiment analysis and LLM-based rewriting to detect and neutralize biased language in political news articles, as part of a group project for Web Search and Retrieval course. Co-authored a published project report and participated in the academic peer review process. (2025)
◈ Software engineering projects including experience with tools for test suite coverage and automation, mutation testing, defect detection, and debugging automation. (2024)
◈ Multiple additional programming projects across many computer science disciplines, including implementation of two types of image identification neural networks (CNN and FCN) with multiple activation functions using Python and Torch, rule-based opponent agents for Tic Tac Toe, Connect Four, and Othello games using Python, multiple web search and retrieval algorithms (tokenizer, BPE encoding, pagerank, language identification, vector-space document indexer, HTML web crawler), and asteroids game in HTML & Javascript.
◈ Created and published Kai: Lost Waters, a Unity engine puzzle platforming game online as part of a group project for Video Game Design and Development course. Game includes 30+ minutes of polished gameplay revolving around a unique water-collecting physics mechanic, with entirely original art and music produced over the period of two months. Project also included intensive progress tracking via agile development, and numerous playtesting and feedback sessions. (2024)
◈ Created a mini-golf course/Rube Goldberg machine with cardboard and motorized elements as part of a group project for Design & Manufacturing course. Project involved mechanical engineering principles such as taking measurements, calculating kinematic equations and creating a full CAD model for the final structure. (2021)
◈ Composed audio sound effects and musical soundtracks for indie video game Polaroid. (2021)
◈ Designed and launched an underwater ROV as part of a college engineering team, as well as modeled and printed a custom bracket to hold thrusters. Shot footage and edited overview video for final presentation. (2019-2020)
◈ Multiple independent 3D modeling projects as a hobby. Substantial experience with website design and development including a photo blog, digital hobby archive, internet art piece, and a personal portfolio built entirely from scratch in HTML/CSS.

ACHIEVEMENTS/ORGANIZATIONS

◈ Order of the Engineer (2025-present)
◈ U. of M. Dean's List (2024)
◈ Resident Hall Association (2021-2024)
◈ Fletcher Hall Council President (2021-2023)
◈ Augmented Reality Initiative (2020-2024)
◈ WolverineSoft Game Development (2019-2024)
◈ National Merit Scholarship Finalist (2019)
◈ Michigan Council of Women in Technology Scholarship Recipient (2019)
◈ Alumni Distinguished Scholarship Competition Commended Semifinalist (2019)
◈ AP Scholar with Honor (2019)
◈ Gold Honor Roll (2019)
◈ Science Olympiad Varsity with. High Distinction Award (2018)
◈ American Legion Auxiliary Michigan Girls State Delegate (2018)
◈ National Honor Society (2017-2019)
◈ FIRST Robotics (2018-2019)
◈ Science Olympiad Varsity Team & Leadership Council (2015-2019)