Roshni Mathew

312-802-7878 roshnimathew04@gmail.com linkedin.com/in/roshnimathew04/

Education & Awards

University of Illinois at Urbana Champaign **August 2022 – May 2026**

B.S. in Computer Engineering *GPA: 4.0/4.0*

Coursework: Data Structures & Algorithms, Analog/Digital Signal Processing, Neural Interface Engineering, Digital Systems, Computer Systems Engineering, Machine Learning, Interactive Computer Graphics

Awards: Dean's List, Clare Booth Research Scholar, Technip FMC Scholar

Experience

McKinsey & Company **May 2024 – July 2024**

Business Analyst Intern

- Conducted customer sentiment analyses for 10+ products using NLP and excel tools to evaluate product performance.
- Analyzed graphs to extract key insights and trends from 10000+ reviews to improve product and customer satisfaction.
- Collaborated on a 4 person initiative to establish a concrete relationship between star ratings and sales using statistical methods such as linear regression, providing valuable insights for strategic decisions.

Human Dynamics and Control Laboratories **February 2023 – Present**

Undergraduate Research Assistant

- Engineered an app in Java using Android Studio to control a robotic arm, achieving a 50% reduction in crash rate.
- Implemented a serial Bluetooth communication protocol, integrating a TI microcontroller with a HC-05 Bluetooth module. The protocol allowed the app to send packets of data to control the state of the arm.
- Developed an MLP binary and multi-class classification model using features extracted from EDA signals to detect anxiety and stress levels in participants across different test conditions.

Disruption Lab **February 2023 – December 2023**

Software Engineer

- Collaborated to build a cryptocurrency based on natural resources using a two-layer DAO, developing a MongoDB database to store token transaction data and updating Solidity smart contracts to output correct token prices
- Integrated MongoDB database with React.js front end to build a real-time graph that updates based on buy/sell activity

OTCR Consulting **October 2022 – Present**

Project Manager, Project Excellence Partner

- Developed a product strategy plan for 10-12 products, outlining initiatives to expand a conversational AI company's portfolio, increase customer satisfaction, and integrate generative AI for sustained competitive advantage.
- Led a team of 5 people to develop niche market applications for a generative AI startup LLM-based product.
- Directed team of 8 members to consolidate information from 80 past projects into a website that members could use to easily find slide designs, niche research topics, and more.

Engineering Open House **May 2023 – Present**

Director of Advancements, Senior Corporate Director

- Directed and presented at a professor panel, alumni panel, and mini research fair with 50+ participants.
- Organized an alumni reception for 20-30 alumni, and led 3 townhalls with 19 departments to expand alumni outreach.

Projects

PacMan | *FPGA, SystemVerilog* **April – May 2024**

- Engineered game using SystemVerilog and C, developing a 30 by 30 maze layout, 4 ghost movement algorithms, ghosts and PacMan maze navigation, 5 sets of character animations, a scoring system, and power-up features.
- Integrated MicroBlaze with FPGA, facilitating seamless control via a keyboard, and colormapping each pixel.

Battleship | *C++* **June – July 2023**

- Programmed a Battleship Game in C++, allowing players to select from 6 ships on a 10 by 10 game board.
- Improved the computer's algorithm by reducing moves by 30% by implementing the use of stacks.

Robotic Car | *Circuits* **January – May 2023**

- Designed a 4 part circuit for a robotic car with the ability to respond to loud sounds by changing its direction, combining components from rotor movement to microphone and amplifier configurations.

Skills

Programming Languages: System Verilog, C/C++, Python (Numpy, Pytorch), HTML/CSS
Software/Hardware: FPGA, Arduino, Android Studio, 3D Printing, Soldering, Vivado, Vitis

Languages: Japanese (Intermediate)