Mustaeen Ahmed

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EDUCATION

University of Central Florida   Orlando, FL
Bachelor of Science in Computer Science   *Aug 2023 - May 2027*

EXPERIENCE

Quantitative Software Engineer Intern   June 2025 - Aug 2025
Morgan Stanley   *New York, NY*
- Migrated a **C++** quant. trading app to the web, reducing loading speeds by **50%**, and integrated **Grafana**.
- Developed **Python** scripts for risk management, improving report quality by **45%** by integrating market data.
- Implemented an interpreter for **Intex Deal Modeling Language**, improving deal processing speeds by **200%**.

Software Engineer   March 2025 - Present
Ideaflow, Inc   *Palo Alto, CA*
- Developed a **graph-based**, ML-powered note-taking application, which allows for AI-powered connection of ideas.
- Optimized a **semantic linking** implementation, reducing note retrieval time by **35%**, and precision by **25%**.
- Engineered **machine learning** solutions for analyzing and clustering notes, achieving **85%** cluster purity and reducing manual grouping by **40%**.

Software Engineer Intern   January 2025 - March 2025
U.S. Department of Transportation   *Washington, D.C.*
- Developed and deployed a scalable web application with **AWS CDK (Cloud Dev. Kit)** and **TypeScript**.
- Reduced backend response time by **54%** by leveraging **RESTful APIs** with **Amazon API Gateway**.
- Improved communications efficiency by crafting solutions to handle **B2B Data Interchange** with **Amazon S3**.
- Developed a vessel tracking interface with **AWS Lambda** and **DynamoDB**, improving port scheduling operations by **28%**, and port throughput by **44%**.

Software Engineer Intern   September 2024 - May 2025
Leidos   *Orlando, FL*
- Researched solutions for advancing the field of **spatial intelligence**, focusing on generating complex relationships between visual data and language by leveraging **LLMs**, **Q-Formers**, and **Hugging Face Transformers**.
- Fine-tuned **machine learning** models for **vision-language pre-training**, increasing model efficiency by **37%**.
- Constructed **data scraping** tools with **Python**, automating data collection and increasing productivity by **20%**.

Software Engineer Intern   June 2024 - November 2024
Darden   *Orlando, FL*
- Engineered several **Python** applications for automation, saving **400+** work hours and **$10000+** per quarter.
- Leveraged **machine learning** powered packages such as **OpenCV**, **scikit-image**, and **PyTesseract** for use in robust error handling, decreasing errors by **94%**, and increasing application efficiency by **49%**.
- Performed efficient **data engineering**, reducing code complexity by **63%**, and application runtime by **26%**.

PROJECTS

Knight Hacks Monorepo | *Next.js, React, TypeScript, SQLite, Tailwind CSS, tRPC, Drizzle ORM*
- Implemented a multi-purpose Discord bot with **25+** useful commands to serve a club chat with **4000+** members.
- Architected a website for club registration with **React**, serving **1500+** students and **10+** company sponsors.
- Facilitated development of new tooling architecture, increasing **DX** by **80%** and developer efficiency by **90%**.

GuitAR | *C#, C++, Unity, Meta SDK, Algorithms, Audio Classification*
- **2nd place winner** of the "Best Overall" category at Knight Hacks 2024, surpassing **102** submitted projects.
- Developed a highly-interactive, educational mixed reality application for learning and practicing the guitar.
- Designed an **audio classification** algorithm which converts audio frequencies to binary data for note validation.

Naavis | *Next.js, React, TypeScript, PostgreSQL, Prisma, Redis, Amazon Web Services, tRPC, Tailwind CSS, Jest*
- Developed a location sharing web application which allows users to track locations of group members and devices.
- Implemented authentication with **TypeScript** and **AWS Cognito**, allowing third-party and regular sign-in.
- Used **Amazon S3**, **tRPC**, and **RESTful APIs** for assets, reducing query speed by **53%**, and latency by **87%**.

TECHNICAL SKILLS

Languages: Python, JavaScript, TypeScript, R, C, C++, C#, Java, Go, HTML, CSS, PowerShell, Bash, GLSL, SQL
Frameworks: React, Angular, Spring Boot, Next.js, Astro, Node.js, Express.js, Tailwind CSS, tRPC, Bootstrap
Libraries: scikit-learn, PyTorch, TensorFlow, Keras, NumPy, Pandas, Matplotlib, Flask, Django, OpenCV
Tools: Git, Jira, AWS, Microsoft Azure, Prisma, Redis, Docker, MongoDB, Jupyter Notebook, Linux
Concepts: Machine Learning, Full-Stack Development, Computer Vision, Cloud Computing, DevOps, Agile/Scrum, Frontend, Backend, Data Science, Software Engineering