Mustaeen Ahmed

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EDUCATION

University of Central Florida   Orlando, FL
Bachelor of Science in Computer Science   *Aug 2023 - May 2026*

EXPERIENCE

Software Engineer Intern   January 2025 - Present
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**.
- Implemented secure user authentication with **Amazon Cognito**, improving application security by **99%**.
- 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 - Present
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%**.
- Manipulated data through cleaning and preparation for efficient model training, reducing data errors by **15%**.

Software Engineer Intern   July 2024 - Present
KnightHacks   *Orlando, FL*
- Implemented a multi-purpose Discord bot with **25+** useful commands to serve a club chat with **4000+** members.
- Produced an algorithm which validated event data for announcements, increasing club event attendance by **68%**.
- 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%**.

Software Engineer Intern   June 2024 - Nov 2024
Darden   *Orlando, FL*
- Engineered several **Python** applications for automation, saving **400+** work hours and **$10000+** per quarter.
- Leveraged several **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%**.
- Developed a **Java** desktop application for streamlined application usage, improving **UX** and portability by **100%**.

PROJECTS

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.
- Leveraged **C#** to develop songs/lessons and core application logic, and utilized **Unity** for 3D development.

Insurify | *Python, Next.js, React, TypeScript, PostgreSQL, Prisma, Tailwind CSS, Docker, Flask*
- Built a multi-purpose insurance application which gives quotes based on a car's damage and customer data.
- Utilized **Python** and **Hugging Face Transformers** to develop an image classification model for car damage.
- Implemented a **machine learning** model for insurance quote estimation based on quantified car damage data.

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, SQL
Frameworks: React, 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