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

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 35%.
- Developed data scraping tools with Python, automating data collection and increasing productivity by 20%.
- Engineered data through cleaning and preparation for efficient model training, reducing data errors by 15%.
- Utilized GitLab, Jira, Confluence, and Agile/Scrum for team collaboration and writing documentation.

Software Engineer

July 2024 - Present

KnightHacks

Orlando, FL

- Developed a multi-purpose Discord bot with several useful commands to serve a club chat with 3500+ members.
- Wrote an algorithm which validated event data for announcements, increasing club event attendance by 40%.
- Engineered 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

June 2024 - Present

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 95%, and increasing application efficiency by 45%.
- Utilized packages such as Pandas, NumPy, and Matplotlib for performing efficient data engineering and for developing concise data models, reducing application complexity by 50%, and application runtime by 20%.
- Developed a Java desktop application for streamlined application usage, improving UX and portability by 100%.

PROJECTS

 $GuitAR \mid C\#, C++, Unity, Meta SDK, Algorithms, Audio Classification$

- 2nd place winner of the "Best Overall" category at Knight Hacks 2024, surpassing 100+ 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.
- Leveraged **Python** and **Hugging Face Transformers** to develop an image classification model for car damage.
- Developed a machine learning model for estimating insurance quotes based on the quantified car damage data.
- Provided resources for insurance education, and built/trained a chatbot to assist customers on insurance topics.

Naavis | Next.js, React, TypeScript, PostgreSQL, Prisma, Redis, Amazon S3, tRPC, Tailwind CSS, Vitest

- Developed a location sharing web application which allows users to track locations of group members and devices.
- Wrote an advanced authentication system with **TypeScript** and **Lucia**, allowing third-party and regular sign-in.
- Leveraged Amazon S3 and tRPC queries to store assets, reducing query speeds by 50%, and latency by 80%.
- Used TypeScript and React to create appealing UI components and ensure responsive design throughout.

Technical Skills

Languages: Python, JavaScript, TypeScript, R, C, C++, C#, Java, Go, HTML, CSS, SQL

Frameworks: React, Next.js, Astro, Node.js, Express.js, Tailwind CSS, tRPC, Bootstrap

Libraries: scikit-learn, PyTorch, TensorFlow, NumPy, Pandas, Matplotlib, Flask, Django, OpenCV

Tools: Git, GitHub, GitLab, Jira, Confluence, Hugging Face, MySQL, PostgreSQL, SQLite, AWS, Prisma, Redis,

Docker, MongoDB, Jupyter Notebook, Figma, Unity, Arduino, Linux, Vitest

Concepts: Machine Learning, Full-Stack Development, Computer Vision, Cloud Computing, DevOps, Agile/Scrum