Maaha Ahmad

Computer Science Graduate

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maaha-portfolio | maaha-ahmad | maahma

Summary

A recent Computer Science graduate seeking exciting roles in tech. Passionate about applying technical knowledge to solve real-world problems, demonstrated through projects and internships. A super nerd who enjoys expanding skills, whether it's exploring new programming languages, frameworks, or crafts. Eager to contribute to and grow within a full-time role that uses and enhances my knowledge in Machine Learning and Software Engineering.

Technologies

Programming: Python, JavaScript, Java, SQL

Data Vizualisation: NumPy, Pandas, Matplotlib

Non-relational Database: MongoDB

Tools and Frameworks: React, Vue.js, Node.js, Git, Bash/Linux

Cloud: AWS Certified Cloud Practitioner

Education

The University of Sheffield, UK *Sep. 2023 - Jan. 2025*
MSc in Computer Science with Speech and Language Processing Grade: Distinction

- **Key Modules:** Scalable Machine Learning, Speech Technology, Natural Language Processing, Team Software Project, Dissertation Project

The University of Otago, New Zealand *Feb. 2019 - Dec. 2022*
BSc in Software Engineering and Computer Science Grade: 2:1

- Awarded University of Otago New Frontiers Entrance Scholarship at the level of Sustained Excellence
- Leader of Comp Girls Otago - society aimed to support girls in STEM (Science, Technology, Engineering and Mathematics) and increase diversity and equality in the tech field. My role involved hosting events that are valuable to students in STEM for example speaker sessions, panel talks, tech company visits, and study groups

Experience

Natural Language and Speech Technology Research Intern *Jan. 2025 - Present*
The School of Computer Science, The University of Sheffield

- Working with Dr. Chaona Chen (Lecturer in Robotics) and Dr. Junhong Yang (Senior Lecturer in Finance) at the University of Sheffield to analyze managers' speech and transcripts from conference calls by extracting features from both text and speech to identify areas where they exhibit signs of nervousness or potential deception. The goal is to help stakeholders assess executives' confidence and sincerity, aiding in investment decision-making
- Reviewing relevant research papers to explore prior implementations of using call audio and transcripts
- Developing a Machine Learning model combining speech and text features to interpret emotions by analyzing audio characteristics and linguistic patterns.
- Tools include Python (utilizing libraries such as Numpy, NLTK), Bash/Linux, PostgreSQL

Speech Technology Research Intern *Oct. 2024 - Jan. 2025*
The LivePerson Centre for Speech and Language Technology

- Collaborated with a postdoctoral researcher to develop speaker diarization (determining "who spoke when" in audio) and speech segmentation techniques (dividing audio into meaningful units).

- Used ESPnet, an open-source end-to-end speech processing toolkit, to implement and optimize diarization models on high-performance computing clusters (HPC). Tasks included adapting pre-trained models, fine-tuning for simulated conversation datasets, and analyzing performance metrics such as diarization error rate (DER).
- Gained experience in dataset creation, debugging large-scale codebases, analyzing research papers, and presenting findings.
- Tools used: Python (utilizing libraries such as Numpy, Pandas, and Librosa) for data manipulation and audio feature extraction, and Bash/Linux scripting for managing high-performance computing clusters and automating workflows.

Projects

Audio Emailer *Feb. 2024 - Jun. 2024*
The School of Computer Science, The University of Sheffield

- Developed a team project for the Second Semester Team Software Project module, allowing busy individuals to access their inbox and have emails read aloud at scheduled times using user-selected voices via Amazon Polly. The application also includes standard email functionalities such as reading and sending emails
- Collaborated with the front-end team to create application mockups in Figma and developed the project based on the designs
- Integrated Gmail API to allow users to log in, retrieve inboxes, and categorize emails into read, unread, and important segments
- Gained experience managing a team-based project, ensuring integration across components, troubleshooting issues, and presenting progress to clients in weekly meetings
- Tools include VueJS (front-end), Firebase (back-end), Amazon Polly (AI Voice Generator), GitLab (version control), Figma (design)

Talking and Listening Social Robot *Jul. 2024 - Sep. 2024*
The School of Computer Science, The University of Sheffield

- Developed a MERN (MongoDB, Express, React, Node.js) application integrated with the Furhat robot and FaceReader (emotion recognition software) for Master's dissertation to assist university students with ADHD in managing their studies
- Designed features for students to log in via Gmail, input class schedules, and generate personalized study plans using OpenAI GPT-4
- Implemented Pomodoro timers (50-minute sessions) that triggered FaceReader to monitor emotions, prompting Furhat to offer calming activities like deep breathing and gratitude reflection if stress(sad or angry emotions) was detected
- Created a quiz feature enabling students to generate 20-question quizzes based on their study notes. Furhat administered the quizzes, provided feedback, and re-quizzed students on incorrect answers to reinforce learning
- Gained expertise in integrating APIs, debugging Furhat's Kotlin-based codebase, and prompt engineering for accurate responses
- Tools include MERN stack (application development), Kotlin (Furhat programming), OpenAI GPT 4 (response generation), Figma (design), GitHub (version control)

Certifications

Certified Cloud Practitioner *March. 2023*
Amazon Web Services (AWS) *Score: 1000/1000*

- Gained knowledge and skills in understanding AWS services, their pricing, basic architectural principles, security best practices, and cost optimization strategies.