# Maaha Ahmad

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## Education

- **The University of Sheffield, UK** *2023 - 2024*
  *MSc in Computer Science with Speech and Language Processing* Achieved: Distinction
  – **Key Modules:** Scalable Machine Learning, Speech Technology, Natural Language Processing, Team Software Project, Dissertation Project

- **The University of Otago, New Zealand** *2019 - 2022*
  *BASc in Software Engineering and Computer Science* Achieved 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

## Work/Internships

- **The LivePerson Centre for Speech and Language Technology** *Oct 2024 - Present*
  *Speech Technology Research Intern* Sheffield, England

  – Collaborating with a postdoctoral researcher to develop speaker diarization (determining "who spoke when" in audio) and speech segmentation techniques (dividing audio into meaningful units)
  – Working with ESPNET, an open-source end-to-end speech processing toolkit, to implement and optimize diarization models on high-performance computing clusters. Tasks include adapting pre-trained models, fine-tuning for specific datasets, and analyzing performance metrics.
  – Learning to create and refine datasets, debug large-scale codebases, analyzing research papers, and present findings.
  – Tools include 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.

- **The School of Computer Science, The University of Sheffield** *Nov 2024 - Present*
  *Natural Language and Speech Technology Research Intern* Sheffield, England

  – Collaborating with Dr. Chaona Chen (Lecturer in Robotics) and Dr. Junhong Yang (Senior Lecturer in Finance) at the University of Sheffield to analyze the emotional states of company managers during conference calls. This aims to help investors interpret executives' tones and cues to gain insights into potential profits and stock trends
  – 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

- **The School of Computing, The University of Otago** *Jan 2021 - Jun 2021*
  *Lab Demonstrator/Tutor* Dunedin, New Zealand

  – As a lab demonstrator, assisted students in the COMP161 module (Introduction to Java) with lab exercises and practice test questions, and marked Mastery Tests (assessments conducted after every two labs) based on the marking criteria provided by the course organizer
  – As a tutor, guided mature students transitioning into a new career field and learning Java as their first programming language, supporting their skill development by reviewing lecture material, assisting with lab exercises, and addressing any challenges they encountered

## Projects Experience

- **Audio Emailer** *2024*
  *Developed software to access user's inbox and read emails at scheduled times*

  – Developed a team project enabling users to access their inbox and hear emails read aloud at scheduled times using user-selected voices via Amazon Polly, alongside standard read and send functionalities
  – 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** *2024*

  *Designed and implemented software for the Furhat robot to function as a study buddy for university students*

  - Developed a MERN (MongoDB, Express, React, Node.js) application integrated with the Furhat robot and FaceReader to assist university students in managing 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

**Amazon Web Services (AWS) Certified Cloud Practitioner** *March, 2023*

- Gained knowledge and skills in understanding AWS services, their pricing, basic architectural principles, security best practices, and cost optimization strategies
- Score: 1000

**Amazon Web Services (AWS) Data Engineer Associate** *In Progress*

- Learning how to design and implement AWS services for big data solutions, including data processing, storage, and analysis

## References

Available on request