

# Sania Zahan

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## Professional Overview

Dynamic professional with experience in designing software and building AI and machine learning applications focusing on multimodal data processing, data collection, and data analytics. I have led projects across diverse domains, focusing on process automation, resource optimisation, and efficiency improvements. I am skilled in communication, recognised for leadership, agile in managing projects, and motivated to foster teamwork and drive innovative solutions.

## Education

### Doctor of Philosophy (Computer Science)

Mar 2020 – Aug 2024

Department of CSSE, The University of Western Australia (UWA)

- Awards: **DAAD Ainet fellow** 2023, **UWA Data Institute Travel Grant** 2023, **32<sup>nd</sup> INCITE Awards** 2023 (winner “Research & Innovation (Postgrad)” and merit in “Social Impact” category), finalist in the **National iAwards** 2023, **PSA Conference Travel Award** 2023, **GRS Overseas Travel Award** 2023, University Postgraduate Award and UWA International Fee Scholarship, 2020-2024.

### Master of Science in Engineering

Apr 2016 – May 2019

Department of CSE, Rajshahi University of Engineering & Technology, Bangladesh

CGPA: 3.83/4.00

### Bachelor of Science in Engineering

Jan 2010 – Mar 2015

Department of CSE, Pabna University of Science & Technology, Bangladesh

CGPA: 3.71/4.00 (4<sup>th</sup>)

## Key Skills and Expertise

- Expert in **project management, Machine learning, Deep Learning, Data Analysis, and Computer Programming.**
- Highly efficient in various data processing techniques including **tabular data, images, videos, sensor signals etc.**
- Hands-on experience in machine learning and data analytic tools: **Pytorch, Scikit-learn, Pandas, SciPy, Numpy, OpenCV, OpenPose, Matplotlib, MATLAB, FFmpeg, Android, SQL, GIT, and AWS cloud computing services.**
- Programming language expertise: **Python, R, Bash, C, C++, Java and Cuda.**
- Strong skills in **Data collection, cleaning, visualisation and statistical analysis.**
- Strong communicator with excellent interpersonal skills, driven to solve complex challenges, and grow as a reliable leader.
- Quick and independent learner – managed six diverse projects modelling multiple domains during my PhD.

## Work Experience

### Research Fellow

Nov 2024 - Present

The University of Western Australia (UWA), 35 Stirling Highway, Crawley 6009, WA

Classification: Part-time

#### Major responsibilities:

- Manage multiple projects to design optimised mRNA sequences using AI technology.
- Propose innovative ideas and implement and maintain related tools.
- Establish and maintain effective working relationships with relevant stakeholders.
- Successfully delivered optimised mRNA sequence outputs and built an advanced optimisation model using LLM.

### Doctorate Researcher

Mar 2020 – Aug 2024

The University of Western Australia (UWA), 35 Stirling Highway, Crawley 6009, WA

Classification: Full-time

#### Major responsibilities:

- Managed six projects in multiple sectors, initiated ideas, managed budgets, and communicated with various stakeholders to maintain proper resource allocations and ensure successful completion.
- Developed automated systems for data collection, analysis, and visualisation, performed data modelling to extract trends and patterns in complex multimodal data and identified their association with specific contexts.
- Designed a novel feature embedding technique that **achieved 93% accuracy, and 0.002 P value.**
- Collaborated with **UWA Tech & Policy Lab** and industry partner **My Medic Watch** on different projects. I ensured that decisions were documented in writing, leading to efficient workflow and timely delivery of high-quality outcomes.

### Machine Learning Intern

Sep 2022 – Dec 2022

My Medic Watch, 25 Bligh Street, Sydney NSW 2000, Australia

Classification: Internship

#### Major responsibilities:

- Identified system requirements and challenges to deploy a machine-learning framework for automatic epileptic seizure detection from smartwatch sensor signals.
- Evaluated and prepared documentation featuring existing technologies in similar companies.
- Collected and analysed data and developed a predictive machine learning framework **achieving 94.34% accuracy.**
- Configured cloud architecture to deploy the framework in AWS using Sagemaker, S3, lambda and step functions.
- Prepared reports accumulating research findings, workflows, and visualisation and presented them to the stakeholders.
- Received high commendations for diligent efforts, commitment and professionalism from industry mentor.

**Consultant**

My Medic Watch, 25 Bligh Street, Sydney NSW 2000, Australia

**May 2023 – Jul 2023**

**Classification:** Contract

**Major responsibilities:**

- Carried out thorough requirement analysis to identify business needs and challenges for an Android app.
- Devised technical specifications and application configurations in alignment with the requirements, ensuring that the client was fully informed about the final output.
- Updated features following feedback from the client and negotiated necessary changes to optimise the app's functionality after deployment testing. Successfully delivered the app within the deadline.

**Software Engineer**

Computer System Adviser, Bangladesh

**May 2015 – Nov 2015**

**Classification:** Full-time

**Major responsibilities:**

- Analysed overall processes to constitute software architecture for data visualisation and management.
- Developed several backend features including a dashboard, customised search and reporting, constructed and maintained database operations, conducted rigorous testing to identify software bugs and enhance efficiency, and provided real-time software solutions during server and project deployments to offsite colleagues.
- Communicated with clients regularly to assess and negotiate system requirements and UX efficiency.
- Developed extensive user manual, documenting software layouts and microservice workflows.
- Delivered inventory management software and an Android application with high customer satisfaction.

**Leadership/Volunteer Experience****UWA Postgraduate UniMentor**

**Jun 2021 – Jun 2023**

- Mentored new postgraduate students to get familiarised with different university facilities, helped to establish connections and smoothly transition to study in a new country. Submitted timely feedback to UWA Guild.

**General Secretary**

**Dec 2021 – Dec 2022**

UWA Society of Bangladeshi Culture

- Identified communication challenges impacting member engagement and event participation, worked with the treasurer to review and optimise budget allocations, and organised several academic and cultural events.

**Student Consultant**

**Nov 2021 - Dec 2021**

Hays China, Inspiration Australia, Practera

- Collaborated with a multidisciplinary team to analyze innovations in top pharmaceutical and biotech companies.
- Evaluated market shares, growth, R&D and revenue to identify potential clients for Hays China.

**Referees**

Ajmal Mian

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