

# Aveek Goswami

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## Education

### Imperial College London

Masters of Engineering, Computational Bioengineering

Oct 2021 - June 2025

United Kingdom

- Dean's List award for Year 2 (79.3%), First Class Honours for Year 1 and Year 2
- Relevant Coursework: Programming, Image Processing, Statistics, Advanced Signal Processing, Electronics

### Raffles Institution

Singapore Cambridge GCE A-Levels

Jan 2017 - Dec 2018

Singapore

- 4 distinctions in H2 Mathematics, Physics, Chemistry and Economics. Merit in H3 Economics (Game Theory)

## Experience

### Sachiv.AI

Software and Machine Learning Engineer

Jan 2024 - Present

Remote, United Kingdom

- Designing deployment framework for Large Language Model (LLM) inference, fine-tuning and retrieval augmented generation to create Sachiv.AI: an Artificially Intelligent Program Manager which enhances business productivity

### Remidio Innovative Solutions | Medios Technologies

Deep Learning Engineer Intern

Jul 2023 - Dec 2023

Singapore

- Trained deep learning models using Microsoft Azure for retinal thickness prediction and macular degeneration diagnosis
- Developed a Generative Adversarial Network (GAN) to produce a pixel-to-pixel mapping of a fundus image to thickness
- Applied computer vision with Tensorflow and OpenCV for image preprocessing. Model achieved 9% mean absolute error

### Nullspace Robotics

Project Intern: Machine Learning Lego Sorter for Lego Robotics Parts

Jul 2022 - Sep 2022

Singapore

- Integrated a self-designed CNN into a Raspberry Pi, achieving 93% classification accuracy across 7 Lego categories
- Created a real-time object recognition, image capturing and classification system, featured on Towards Data Science

### Government Technology Agency (GovTech)

Research Engineer Intern

May 2021 - Aug 2021

Singapore

- Lead developer for SmartGym bluetooth blood pressure monitor, for recording and storage of senior citizen's health data
- Programmed a Raspberry Pi to receive bluetooth data and transmit it via HTTP to a Flutter App to display information

### Singapore Civil Defence Force (SCDF)

Fire and Rescue Officer

Jan 2020 - Feb 2021

Singapore

- Led a team of 20 firefighters when responding to large fire and healthcare emergencies. Featured on the SCDF website.

## Projects

### Hyperspectral Brain Imaging

Oct 2023 - Present

- Designing and building a low-cost hyperspectral imaging system to observe disease biomarkers in mice brain tissue
- Applying spectral unmixing and principal component analysis algorithms to extract information from data

### React Native Mobile App for a Geographical View of Food Promotions

July 2023 - Present

- Programmed python service to scrape online food offers and transmit data using Flask to an Ngrok backend server
- Developed a React Native App which retrieves server data and displays the offers' coordinates on a map at your location

### Breast Cancer Masking and Risk Prediction Web App

Nov 2023 - Jan 2024

- Designed a CNN for breast density Bi-RADS classification, deployed onto a web application using Streamlit

### Agent ARnold: Augmented Reality Application for Children with Cerebral Palsy

Oct 2022 - June 2023

- Software Lead in a team of 10. Designed a mixed reality game on Unity with C# scripting, OOP and computer vision

## Co-Curricular Activities

### Imperial College Data Science Society

Vice President (2023 - Present) | Head of Projects (2022 - 23)

Aug 2022 - Present

United Kingdom

- Facilitated talks, events, projects and competitions for 1100 society members, including the 2023 IBMz London Datathon.
- Delivered a 4-week workshop on large language models to 120 attendees. Topics covered include prompt engineering, supervised fine-tuning, reinforcement learning, and building systems with LangChain, HuggingFace, OpenAI API

More: Raffles Tennis Captain, Volunteer Tennis Coach for the visually impaired, PADI Open Water Scuba Diver

## Professional and Technical Skills

**Programming Languages:** Python, Java, JavaScript, Dart, MATLAB

**Programming Frameworks and Libraries:** Tensorflow, Scikit-learn, PyTorch, React, Flutter, Python Data Analytics

**Courses (DeepLearning.ai):** Deep Learning Specialisation, Generative AI with Large Language Models