

# Antara Ganapathy

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**Summary:** *Dedicated student with a deep passion for tech entrepreneurship who aims to leverage tech to drive social impact.*

## Education:

**The University of Manchester:** BSc (Hons) Computer Science September 2024 – June 2027

- Courses: Mathematical Techniques for Computer Science, Fundamentals of Computer Engineering, Fundamentals of Computer Architecture, and Introduction to Programming I

**Indus International School Bangalore:** IBDP August 2022 – May 2024

- Subjects taken: Computer Science HL, Math Analysis and Approaches HL, Physics HL, Economics SL, English Lang & Lit SL, French AB Initio SL

**Indus International School Bangalore:** IB MYP August 2019 – May 2022

- Subjects taken: English Lang & Lit, Hindi Capable, Extended Mathematics, Physics, Chemistry, History, Design, Economics

## Experience

**Budgetary, Founder & Developer** January 2022 – Present

- Developed a mobile app with Flutter/Dart aimed at helping university students manage their money effectively.
- Released the beta version which included features such as expense logs, currency converter and to-do lists.
- Developed web-app with Python Flask to help instill financial discipline in children; briefly deployed with Heroku ([Github](#))
- 1 of 3 highschoolers selected across India for pre-incubation program by Runway

**StartupYou, Student Entrepreneur** August 2020 – December 2022

- 1/42 highschoolers selected from my school for the program's first batch
- Successfully completed the beginner, intermediate and advanced programs.
- Participated in various collaborative activities such as elevator pitches and business challenges
- Honed my critical thinking, problem-solving, design thinking and communication skills

**LaunchX, Student** July 2023 – August 2023

- Developed understanding of various stages and tools for building a start-up such as problem identification, strategy, development, selling & growth.
- Launched a fitness platform, EZFitness, aimed at encouraging physical well-being amongst China's senior citizen population through traditional practices such as Tai Chi.
- Honed my critical thinking, problem-solving, design thinking and communication skills

**Take the World Forward Fellowship, Learn with Leaders, Fellow** August 2021 – February 2022

- Collaborated on two actionable projects by applying the design thinking process: (1) addressing the lack of access to quality STEM education (2) investigating sleep deprivation amongst teens
- Mentored by students from Harvard HPAIR & YLC
- Improved my collaboration, problem-solving and design thinking skills.

**Futurecamp, FutureschoolAI, Fellow** June 2021 – July 2021

- Learnt important AI/ML techniques such as CNN & NLP under the guidance of Dr. Rahul Dave (ex-Harvard faculty) and Dr. Raghu Meka (Associate Professor at UCLA)
- Trained a ML model with transfer learning and CNN to detect diabetic retinopathy and diagnose risk of macular edema as part of end-of-course collaborative project
- Improved my understanding of AI/ML and learnt how to implement key algorithms with Python

## Research/Publications

**Young Scientist Journal, Vanderbilt University** ([Journal Link](#))

- Wrote a research paper titled 'Defining Evaluative Metrics for Medical Imaging Datasets' under the guidance of a PhD student at UCL.
- Recognized the importance of defining dataset criteria, especially for medical imaging datasets, to ensure model performance.

**IB Computer Science Extended Essay**

- Investigating the impact of transfer learning on model performance to diagnose pneumonia
- Implemented a CNN with pre-trained models such as VGG16, ResNet50 & InceptionV3

## Projects

### **RAG Chatbot (Github)**

- Developed a chatbot with Retrieval-Augmented Generation to allow users to chat with a PDF
- Used Pinecone vector database and LangChain to develop the chatbot and Python Streamlit to develop the web-app

### **Sentiment Analysis (Github)**

- Trained a model with Natural Language Processing to analyze the sentiment news headlines
- Used web-scraping, with Python, to generate a test set of CNN news headlines

### **Glaucoma Detection (Github)**

- Trained a model to detect glaucoma on the 'Glaucoma Detection' Kaggle dataset
- Compared the performance of different pre-trained models: VGG, ResNet, Inception, and Xception
- 1/15 (of 200) students selected to present at the final round of the National High School Data Science Competition (NDSC), conducted in partnership with the Harvard Undergraduate Open Data Project

### **Diabetic Retinopathy Detection (Github)**

- Trained a model to detect diabetic retinopathy and the risk of macular edema on the Indian Diabetic Retinopathy Image Dataset (IDRiD).
- Investigated the impact of transfer learning with different pre-trained models such as InceptionNet and VGG16 on the model trained using a CNN.

### **Pneumonia Detection (Medium, Github)**

- Trained a model on the 'Chest X-Ray Images (Pneumonia)' dataset to diagnose pneumonia in children under the age of 5 through chest x-ray scans.
- Implemented a CNN to train the model and achieved an accuracy of 96.6%.

### **Fake News Detection (Medium, Github)**

- Trained a model using NLP to detect fake news using the 'Fake and real news dataset'.
- Implemented techniques such as TF-IDF Vectorizer and Multinomial Naive Bayes Classifier

### **IPCC Dataset Analysis (Github)**

- Analyzed the 'Intergovernmental Panel on Climate Change (IPCC)' dataset to find key drivers of climate change
- Used Numpy, Pandas and Matplotlib Python libraries

## Skills

*Python (Flask + AI/ML), Flutter/Dart, HTML, CSS (Tailwind), JavaScript (React), SQL*

## Licenses and Certifications

<b>Divide and Conquer, Sorting and Searching, and Randomized Algorithms</b> Stanford Online, Coursera	Issued June 2021
<b>App Development with Flutter</b> TechSparx	Issued June 2021
<b>AI for Everyone</b> DeepLearning.AI, Coursera	Issued April 2021
<b>Web Designing (Level 1 &amp; 2)</b> TechSparx	Issued December 2020
<b>Programming in Python (Level 1)</b> TechSparx	Issued November 2020
<b>Web Design for Everybody: Basics of Web Development &amp; Coding Specialization (3/5)</b> University of Michigan, Coursera	Issued July 2020
<b>Data Collection and Processing with Python</b> University of Michigan, Coursera	Issued June 2020
<b>Learn to Program: The Fundamentals</b> University of Toronto, Coursera	Issued May 2020

## **Honors and Awards**

<b>Young Achiever's Award</b> (awarded for social service) Indus International School Bangalore	2024
<b>Blue Star Award</b> (awarded for academic and extra-curricular achievements) Indus International School Bangalore	2023
<b>Young Achiever's Award</b> Indus International School Bangalore	2022
<b>Blue Star Award</b> Indus International School Bangalore	2022
<b>Front Runner</b> (3 <sup>rd</sup> highest hypothetical investment of \$6000 in Mock Shark Tank) StartupYou	2022
<b>Certificate of Excellence</b> Futureschool.AI	2021