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 by Veritas AI in partnership with the Harvard Undergraduate Open Data Project; presented findings to Harvard and Columbia graduates.

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

Divide and Conquer, Sorting and Searching, and Randomized Algorithms Issued June 2021
Stanford Online, Coursera

App Development with Flutter Issued June 2021
TechSparx

AI for Everyone Issued April 2021
DeepLearning.AI, Coursera

Web Designing (Level 1 & 2) Issued December 2020
TechSparx

Programming in Python (Level 1) Issued November 2020
TechSparx

Web Design for Everybody: Basics of Web Development & Coding Specialization (3/5) Issued July 2020
University of Michigan, Coursera

Data Collection and Processing with Python Issued June 2020
University of Michigan, Coursera

Learn to Program: The Fundamentals Issued May 2020
University of Toronto, Coursera

Honors and Awards

Young Achiever's Award (awarded for social service) 2024
Indus International School Bangalore

Blue Star Award (awarded for academic and extra-curricular achievements) 2023
Indus International School Bangalore

Young Achiever's Award 2022
Indus International School Bangalore

Blue Star Award 2022
Indus International School Bangalore

Front Runner (3rd highest hypothetical investment of $6000 in Mock Shark Tank) 2022
StartupYou

Certificate of Excellence 2021
Futureschool.AI