Aryan Agarwal

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♒ 23/07/2000   🏳 Nationality: Indian   VISA Visa Status: Golden Visa   📍 Location: Dubai, UAE

Education

University of Maryland College Park — **December 2023**
Bachelor of Science in Computer Science — *College Park, Maryland*
- Dean's List honor on multiple occasions
- Activities and clubs: UMD Game Developers Club, UMD Cybersecurity club.

Relevant Coursework — **December 2023**
University of Maryland College Park — ,
- Data Structures
- Database Management
- IOS Development
- Web Development
- Data Science
- Artificial Intelligence
- Computer Architecture
- Machine Learning
- Algorithms Analysis
- Computer Vision
- Linear Algebra
- Intro to OOP Principles

Experience

Undergraduate Researcher — **Jun 2021 – Aug 2021**
University of Maryland College Park — *College Park, Maryland*
- Developed a system using Python to perform semantic segmentation on documents to create a word bag
- Used Python libraries to run machine learning models that detected each word in a document and created subheadings based on distance between paragraphs.
- Explored new methods of performing semantic segmentation using Python

Projects

Handwriting Recognition using MNIST database | *Python* — **Oct 2023**
- Designed a program that uses the MNISt public database to detect handwriting and is able to classify images containing handwritten numbers between 0 and 9
- Utilized Python Computer Vision Libraries such as OpenCV to read in the database and train the model on the training data. The test data was used to get an accuracy of 95%. The program was further modified to be able to read in live handwriting using the front camera to recognize digits.

Multilayer Perceptron Neural Network for classifying images | *Python, NumPy* — **Feb 2022**
- Developed a Multilayer perceptron Neural Network from scratch using NumPy
- Implemented the gradient descent algorithm and back-propagation for learning of network.
- Used 50,000 training images to train network.
- Optimized the back-propagation to reduce the training time down to 20 minutes from 10 hours, and achieved an accuracy of 97% on 5000 test set images.

Flappy Bird IOS Application | *Swift* — **Dec 2021**
- Made a modified version of the Flappy Bird game as a group project for an IOS development course at UMD
- Utilized SwiftUI to manipulate user input and keep track of score and object collision
- Divided work equally among all team members with strict deadlines to submit weekly reports to the course instructor

Technical Skills

Languages: Python, Java, C, HTML/CSS, JavaScript, SQL, OCaml, Ruby, Rust
Developer Tools: VS Code, Eclipse, Google Cloud Platform, Android Studio
Technologies/Frameworks: React, Express, NodeJS, NumPy, Scikit Learn, PyTorch, Linux, GitHub, JUnit, PyTorch, OpenCV, React, Google Cloud Platform, Flask, Firebase, Docker, Wireshark.

Extracurricular

Online courses — **May 2020 – Present**
CodeCademy — *UMD*
- Completed multiple courses on CodeCademy website related to Web Development
- Learned various framewords used in Web Development such as React, Express, Node.

Volunteering — **July 2016 – Present**
Various Countries
- Donated blood and platelets 10+ times at American Red Cross Blood Donation Centers in Washington D.C.
- Taught English and Computer Science to underprivileged children in rural parts on India during the Summer of 2016
- Volunteered at SF Marin Food Bank in San Francisco by helping pack groceries into bags that would be distributed to people who cannot afford to buy groceries.