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Shaan (Aasmaan) Yadav

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Education

Duke University — Expected May 2026
BSE: *Double major in* ***Electrical and Computer Engineering & Computer Science*** — *Durham, NC, USA*
4.0 GPA | *Dean's List with Distinction* | *Catalyst Tech Pre-Professional Society*

Eton College — September 2017 – June 2022
4.0 GPA *(all A* grades)* | *Oppidan (Academic) Scholarship* | *House Captain* | *President of Scientific Society* — *Windsor, Berkshire, UK*

Experience

Duke Singh Research Lab — September 2023 – Present
Student Researcher — *Duke University, NC, USA*

- Conducting research under Dr Rohit Singh at the Singhlab at Duke (https://singhlab.net) to develop a better protein language model that can create proteins to **effectively tackle unseen rare genetic diseases**
- Developing the **ConPLex deep learning protein language model**, improving its accuracy by training it on the LIT-PCBA proteins dataset to improve the 1-shot prediction capabilities on unseen rare genetic diseases

Council for Entrepreneurial Development — October 2023 – Present
Intern — *Durham Research Triangle, NC, USA*

- Accelerating **development of early-stage startups** as part of the CED Startup Talent and Training program
- Helped manage a startup pitching event for 200 people; Analysed startup data (salesforce) to better inform resource allocation; Creating a large-language model built upon GPT-4 to provide CED-specific information to clients 24/7

Raiz Vertical Farms — June 2023 – August 2023
Software Engineering Intern — *Lisbon, Portugal*

- **Collaborated directly with CTO** to convert applications (applications included a platform for farm resource management and allocation and models to optimise hydroponics) from **prototype to production stage**
- Transferred app from **obsolete technologies to Mantine v7**, hosting on fly.io with staging and production environments; Connected environments to **postgres SQL database**; **Refactored old React code** into new environments

Palantir — July 2022
Data Analyst Intern — *London, UK*

- **Analysed and extrapolated raw, incomplete UK wildfire data** (using Palantir's Foundry platform) to **provide data-backed insights for the UK fire department** to most effectively distribute resources to combat unexpected wildfires

Projects

CPU Design using Logisim — August 2023 – Present
Hardware Engineer — *Duke University, NC, USA*

- **Designed and implemented a 16-bit MIPS word-addressed RISC architecture CPU** using only elementary gates and D flip-flops in Logisim
- Created aspects of the cpu such as registers, register files, ALU, shifters, decoders, reading and writing in/from memory

Solar Panel Efficiency Optimization Through Image Capture — August 2022 – December 2022
Hardware Engineer — *Duke University, NC, USA*

- Communicated with client to deliver a **low-cost, simple Arduino device** to store high-resolution pictures at specified intervals
- Captured images of dust levels for analysis to **optimize solar panel cleaning schedules and maximize solar efficiency**
- Contributed to and delegated tasks regarding technical memos, presentations, and an academic poster as a team

MelanomaScan — September 2021 – March 2022
Developer — *Eton College, Windsor, UK*

- **Developed iOS app to diagnose skin cancer using iphone cameras**, and provide location and person specific cancer risk
- Full Stack development using OOP with Swift and XCode, created a user-friendly app utilising Convolutional Neural Networks, GPS & Camera hardware, API calls, Data cleaning & management
- **Project demo:** https://shaan106.github.io/projects/project_melanoma_scan.html

TeensInAI — March 2020 – January 2022
Course Developer and Teacher — *London, UK*

- Hired by TeensInAI to **develop and teach a course as an introduction to machine learning for teens**
- **Taught course to ∼200 students**; 60 students at a TeensInAI hackathon, 30 at Eton, and 100 more through recorded content
- Link to content: https://youtube.com/playlist?list=PLhH6nWDpggsH5EI8oKAXosorKVcH59tbE

Technical Skills

Proficient – Python, Java, HTML/CSS, Swift (XCode), Github, Machine Learning theory, API usage, UX design, Object Oriented Programming, Team methodoligies (Spiral, AGILE), C, MIPS (Assembly Code), Git, Logisim

Intermediate – PyTorch, Tensorflow, React, Javascript, SQL, Firebase, Docker, HPC Cloud Computing, Linux, Shell