

Abdalla Abdalla

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EDUCATION

University of Cambridge

Bachelor's in Physical Natural Sciences – Courses including:

Cambridge, United Kingdom

- Physics, Statistics, Probability, Linear Algebra, Machine Learning, Materials Science

SKILLS

Languages: Python, SQL, R, HTML, CSS, JavaScript, LaTeX, Markdown, MATLAB

Developer Tools: GCP, Vertex AI, Docker, Power BI, Tableau, Git, VS Code, Visual Studio, PyCharm, Jupyter Notebook

Libraries and Frameworks: NumPy, pandas, Matplotlib, scikit-learn, TensorFlow, YOLO, XGBoost, OpenCV, Next.js, Streamlit,

Machine Learning Skills: Neural Networks, Natural Language Processing (NLP), Open AI API, Computer Vision, Data

Preprocessing and Augmentation, Monte Carlo Simulations, Sentiment Analysis, Generative AI

EXPERIENCE

Software Engineering Fellowship

July 2024 – September 2024

Headstarter

Remote, United States

- Developed full-stack AI-powered web applications using Next.js, Firebase, and OpenAI, integrating cloud-based services and third-party platforms like Stripe and Clerk to enable seamless payment processing and user authentication.
- Designed and deployed scalable, cloud-based solutions on GCP, implementing secure API routes, real-time communication systems, and AI-driven features such as dynamic customer support.
- Collaborated with a Mixed Martial Arts startup to build scalable web applications using computer vision technologies like OpenCV, MediaPipe, and YOLO, deploying machine learning models via Docker and Vertex AI to handle video uploads for fight analysis.

Data Scientist Intern

July 2023 – September 2023

Thornton Tomasetti

Warrington, United Kingdom

- Pioneered a probabilistic assessment framework using Monte Carlo simulations and uncertainty quantification techniques with Python and MATLAB, enhancing the precision of risk assessments in engineering applications.
- Utilized scikit-learn for regression analysis, achieving a 22% improvement in the predictive accuracy of structural failure probabilities, highlighting the effective use of machine learning libraries to bolster decision-making frameworks in engineering.
- Initiated and spearheaded the adoption of a data-driven culture focused on uncertainty quantification within the organization, adeptly conveying complex data analyses to management and clients.

Environmental Data Analyst Intern

June 2019 – November 2019

Nuffield Foundation

Manchester, United Kingdom

- Led a project to capture and analyze satellite signals for advanced atmospheric and oceanic studies. This initiative demonstrated superior data management skills and resulted in a 15% improvement in image resolution, enhancing the quality of meteorological analysis.
- Conducted in-depth analysis of complex datasets for meteorological predictions and climate change studies, underscoring a strong commitment to leveraging analytical insights for societal benefits and environmental stewardship.
- Delivered compelling presentations on satellite signal analysis research to a non-technical audience.

PROJECTS

Tumor Track | Python: NumPy, Matplotlib, pandas, seaborn, TensorFlow, OpenCV, scikit-learn | github.com

- Developed and implemented a Convolutional Neural Network (CNN) using TensorFlow for brain tumor detection, achieving an accuracy of 91% with a precision of 85% and recall of 91%, demonstrating strong performance in distinguishing between tumorous and non-tumorous MRI images.
- Utilized advanced data preprocessing techniques with OpenCV, including image resizing, normalization, and augmentation, to enhance the model's robustness and improve generalization across diverse datasets.

Amazon Product Recommendation App | Python: NumPy, pandas, scikit-learn, Streamlit, TextBlob, transformers | github.com

- Developed an Amazon product recommendation system using NLP techniques and a TF-IDF Vectorizer to suggest products based on user input prompts.
- Implemented sentiment analysis with TextBlob and used generative AI with BART for generating concise summaries of product reviews to enhance user experience and decision-making.

Face ID | Python: NumPy, Matplotlib, pandas, TensorFlow, OpenCV, scikit-learn | github.com

- Designed and implemented a real-time face detection and tracking system, leveraging advanced machine learning techniques to demonstrate proficiency in AI applications.
- Built a deep learning model using TensorFlow's Functional API and VGG16 architecture, incorporating dual heads for classification and regression tasks, highlighting expertise in model architecture and multi-task learning.

CERTIFICATIONS

Machine Learning Specialization | Python: NumPy, Matplotlib, pandas, TensorFlow, XGBoost | [Stanford University](https://stanford.edu)