Jacob Ismail Curtis, BSc (Hons)

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EDUCATION

Durham University | Durham, UK — *October 2020- July 2023*
Bachelor of Science with Honours: Computer Science (**Upper Second-Class Degree)**

Peter Symonds, Sixth Form College | Winchester, UK — *August 2018- June 2020*
A-Levels: Mathematics **(A)**, Computer Science **(A)**, Physics **(B)**, Extended Project Qualification **(A*)**

Hounsdown School | Totton, UK — *August 2016- August 2018*
GCSEs: **Ten Grade 9's**

TECHNICAL SKILLS

Programming: Python, JavaScript, SQL, Swift, C
Technologies: React Native, HTML 5/CSS 3, Node.js, Rest API
Data Science and Machine Learning: Pandas, NumPy, Scikit-Learn, TensorFlow, PyTorch
Software and Tools: AWS, GCP, Linux, Git, Docker, Firebase, Microsoft Office, Figma

WORK EXPERIENCE

SafetyNet | Remote — *August 2023- Present*
Full-stack Engineer

- Pioneered a cross-platform, full-stack application for SafetyNet, a civil services marketplace, facilitating P2P contracts and execution.
- Built a React Native app using JavaScript, Expo, and Docker, using GCP Firebase for scalable data storage and API management.
- Architected serverless Cloud Functions to aggregate data sources, processing public crime datasets for localized safety insights.
- Established a CI/CD pipeline using Expo Application Services and GitHub Actions to automate deployment processes.

Visint LLC | Chicago, US — *June 2022- October 2022*
Software Engineer Intern

- Led the deployment of SpotGenius, an AI-based parking detection platform, at four new pilot sites in the Chicago area, covering 150-350 parking spots.
- Set up 20+ security cameras, and managed responsibilities from organizing network infrastructure to SpotGenius site deployment.
- Built the POC for the SpotGenius CarPlay application using Swift and leveraging the SpotGenius API, showcasing the viability of the SpotGenius service in the CarPlay ecosystem.
- Carried out an R&D project to improve the object detection pipeline process using NVIDIA's DeepStream SDK.

PROJECTS AND RESEARCH

Go Wander: AI Travel Itinerary Generation — *July 2023 - Present*

- Developed Go Wander, a full-stack mobile app for generating personalised travel itineraries to make travel planning easy, leveraging the ChatGPT API for NL prompts/responses and the Google Places API for accurate attraction recommendations.
- Designed a professional, intuitive UI/UX wireframe in Figma to guide frontend development in React Native
- Leveraged AWS services including Lambda, API Gateway, and MongoDB for a high-performance, scalable backend infrastructure, ensuring rapid response times and adaptability to future data sources.

Enhancing Infrared Drone Detection for Counter-UAV System (Dissertation) — *October 2022 – May 2023*

- Proposed an innovative methodology that leveraged synthetic IR drone imagery to enhance the accuracy of a YOLOv7 model for IR drone detection to 93.8% and produced a 9000-word research paper discussing the experimental procedure and results.
- Investigated a combination of 3D drone rendering and adversarial data augmentation using a modified CycleGAN, to address the limited availability of IR drone imagery training data, outperforming existing detection models by 2.8%.

VR Chat Software for IBM — *January 2022-May 2022*

- Engineered a VR chat software for IBM using Unreal Engine, enabling elderly individuals in social isolation to engage in immersive, "like-real world" interactions with friends and family.
- Established the backend infrastructure for the VR chat application using Express.js for Node.js and CherryPy for Python, implementing user registration, login, and meeting management functionalities.
- Ensured compatibility across multiple platforms and incorporated NPC characters powered by IBM Watson for lifelike interactions within public environments.