Thiruwaran Kalvin

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PROFESSIONAL SUMMARY

Current second year Computer Science with Artificial Intelligence student reading at the University of Liverpool with a strong passion for Research and Programming, working towards a long-term ambition of becoming a Researcher in Artificial Intelligence or a Machine Learning/Deep Learning Engineer. Alongside technical and academic skills that are demonstrated throughout the degree, significant hands-on experience has been gained through independent Projects and Research Initiatives.

EDUCATION

University Of Liverpool
Liverpool, United Kingdom
BSc Hons, Computer Science with Artificial Intelligence Present – July 2027
Classification: First-Class (Predicted Grade)
Relevant Coursework: Advanced Artificial Intelligence, Introduction to Data Science, Introduction to Artificial Intelligence, Deep Learning, Data Structures and Algorithms, Database Development, Software Engineering, Object Orientated Programming, Programming Language Paradigms, Analytic Techniques for Computer Science, Foundations of Computer Science, Computer Systems

WORK EXPERIENCE

LASER (Liverpool Association For Space Engineering And Research) Liverpool, United Kingdom
Rocket Team – Software Engineer And Project Lead (Part-Time) (October 2024 – Present)

- Implemented **Python and Adafruit's documentation** to interface with sensors including BMP390, MPU6050, H3LIS331, and the Raspberry Pi Camera Module 3, **enabling accurate data collection** for obtaining rocket telemetry.
- Influenced the design and schematics of the flight computer, **integrating 5+ electrical components and sensors, improving overall optimal system performance by 30%.**
- Collaborated with a **multidisciplinary team of 11+ engineers** to develop and implement the rocket's electrical systems, fostering a culture of **innovation through shared ideas and problem-solving**.
- Conducted thorough **research and comparative analysis of 10+ critical components**, including sensors and microcontrollers, to **inform design decisions and enhance system reliability.**
- Developed and incorporated **logical and analytical solutions to communication challenges** between the rideshare flight computer and ground control, **improving operational efficiency.**

Retail Guys Ltd Manchester, United Kingdom
IT Consultancy And Computer Technician (Part-Time) September 2021 - Present

- Executed crucial roles **including software/hardware installation for over 100+ systems**, video tutorial
- creation, **database entry for 500+ records**, and consultancy.
- Recorded **20+ app video tutorials**, communicating with clients/users in a straightforward manner, regardless of technical knowledge.
- Analysed client interactions to identify potential system manipulations, **preventing 3+ unauthorized access to applications outside the main software.**

PROJECTS

Simple MNIST Digit Classifier Neural Network | Deep Learning Research Project/Research Paper.
July 2025 - Present

- Researched and designed a **Python Neural Network** from scratch to **recognise handwritten numerical digits** from the **MNIST dataset**, **utilising 7960 trainable parameters** with Forward/Backpropagation, ReLU, SoftMax activation functions.

Study Shorts | Java Desktop App | Source Code. August 2025

- Integrated a **full-stack Java study quiz flashcard App** with **Java Swing Frontend** and MySQL Backend that enables users **to create and study 100+ questions across modules/categories** through **engaging short-form video content**.

Interactive Black-Scholes Option Pricing Model | Website | Source Code.
August 2025

- Applied a Black-Scholes **Option Pricing model** for **European options** using **Python Backend** and **Streamlit Frontend, Yahoo Finance API** fetching **near real-time quotes from 10,000+ global tickers** and **SQLite Backend** that **calculates option prices, estimates implied volatility and visualises data**.

Formula 1 Driver Stats | Website | Source Code.

August 2025

- Applied **F1 Driver Dataset** to produce a **full-stack Java Web App** with **a Spring-Boot, PostgreSQL Backend containing data from 25+ drivers with associated information and HTML/JS Frontend** providing **information** about the 2024 season **via** a **search interface**.

What's The Weather | Java App | Source Code

June 2025

- Integrated a **full-stack Java Desktop App** that **retrieves** and **displays real-time weather data** for user with a **Java Swing Frontend** handling user input and displaying structured weather data in a responsive interface and **Open-Meteo Weather Forecast API Backed** to **fetch and parse JSON data displaying accurate live metrics, handling millions of locations delivering forecasts for any city**.

TASP-TALIA | Python CLI/Voice App | Source Code.

July 2022 - Present

- Developed TASP (**Totally Auto Stock Pinger**) to notify user when tracked stocks reach specified buy/sell conditions, **pulling live data from Yahoo Finance.**
- Implemented TALIA (**Totally Artificial Language Intelligence Assistant**), a **Python CLI/Voice assistant** that can **process typed or spoken 50+ commands** and **assisting users with everyday tasks**, leveraging **neuralintents.GenricAssistant** with **pre-trained intents model to map natural-language commands to corresponding functions, integrating APIs/services for live, real-time information**.

AI Python Draughts System | Python App | Source Code.

2023

- Applied an **artificial intelligence draughts (checkers) engine** for **Human vs Human/AI** using **Python** an **Pygame interface** for board visualisation on a **(10 x 10) board** handling gameplay with **40 pieces** and user interaction.
- Designed the **decision-making logic using the minimax algorithm** with **heuristic evaluation** functions demonstrating **applied game-AI algorithms**.

TECHNICAL SKILLS

- **Languages:** Python, Java, SQL, C#, C, HTML, CSS, MATLAB, Haskell, Markdown, LaTeX
- **Developer Tools:** GitHub, Git, Linux, VS Code, Visual Studio, IntelliJ, Juypter Notebook, Docker
- **Libraries/Frameworks:** Streamlit, SQLite, MySQL, PyTorch, TensorFlow, NumPy, Pandas, Matplotlib, Seaborne, Spring Boot, Swing

EXTRACURRICULAR/INTERESTS

- **JPMorgan Chase & Co. Quantitative Research Virtual Experience Program Forage** - Completed a simulation focused on quantitative research methods, analysed a book of loans to estimate a customer's probability of default, used dynamic programming to convert FICO scores into categorical data to predict defaults.
- **Artificial Intelligence & Machine Learning Research** – Independent Research Projects such as handwritten numerical digit classifier using Python and Mathematics, enhancing research experience.
- **Blogging on latest advancements in AI & Computer Science** – Author of a personal blog explaining Research Papers, Projects and Concepts in the field of Computer Science, strengthening communication and subject expertise.
- **Competitive Programming** – Competed in online coding challenges and contests for enjoyment, improving algorithmic thinking, time-constrained problem-solving and programming efficiency.

REFERENCES

References Available upon Request.