Marko Stefanov

Education

University College London London, UK

Bachelor of Computer Science *Sep. 2024 – Exp. Jun. 2027*

- First Year Average: 86.24/100.00, with **First Class Honours** in all modules.
- Fields of study: Systems and Software Engineering, Mathematics for Computer Science, Programming, Security, Computer Architecture and Concurrency, Intelligent Systems (Minor).

Mathematics-Informatics High-School Skopje, MK

Secondary School *Sep. 2020 – Jun. 2024*

- Average: 5.0/5.0

Technical Skills

Programming Languages: C++, C, Python, Java, Haskell, HTML, CSS, Prolog, Clojure, SQL
Tools and Frameworks: Django, Arduino Boards, Espressif Boards
Languages: English (fluent), Macedonian (native)

Projects

Tuberculosis Vaccine Production Bioreactor Model

- Led a team of eight students to design and build a fully functional small-scale bioreactor.
- Delivered a control system enabling real-time management of temperature, pH, and stirring speed via a custom frontend interface.
- Implemented a **MQTT** publisher–subscriber communication between the frontend and an **ESP32** microcontroller, with **I²C** bus to an **Arduino** for actuator control (heating element, stirring motor, alkali and acid pumps).

Minesweeper Bot

- Created a bot to solve Google Minesweeper using **OpenCV** and **PyAutoGUI**.
- Designed an algorithm that completes over **99.99%** of Minesweeper levels with definite solutions.

Profili – Web App for Industrial Use

- Developed a web app to generate optimal pipe-cutting instructions using the column generation algorithm.
- Application was **successfully integrated** at ElektroLab, minimising industrial waste.

City Recommendation System

- Built a **Python** program recommending similar cities by comparing keyword-based feature sets extracted from a web-scraped dataset.

Tetris Autoplayer AI

- Designed a Tetris AI using ten heuristics and **reinforcement learning** to achieve competitive scores.

UCL Yellow Pages Web App

- Developed a website to assist UCL students in finding their peers' contact information.
- Implemented the platform using the **Django** framework in **Python**, with data managed through **SQL (Django ORM)**.

PLC for Biogas Power Plant

- Developed control and safety systems for a reserve generator used during main generator maintenance.
- Programmed a **Programmable Logic Controller** with an integrated **Human–Machine Interface** to enable safe and user-friendly generator operation.
- Designed and implemented software and hardware interlocks to prevent simultaneous use by multiple processes, ensuring equipment protection and compliance with safety standards.

ReadingStar 2.0 (In Progress)

- Collaborating with **IBM**, **Intel** and the **NAS**.
- Developing a karaoke-style application to help students with autism gain confidence in speaking aloud.
- Created the music generation leveraging Meta's **MusicGen - Small** text-to-music model.

Internships

ElektroLab *Jul. 2020*

- Constructed a power distribution panel from concept to completion.
- Programmed electrical panels using analog and digital inputs/outputs.
- Installed a power distribution panel and laid cables in a warehouse.

Man-Dra *Jul. 2023 – Aug. 2023*

- Coded **Programmable Logic Controllers** to read and display data from electrical measuring instruments using ladder logic.
- Developed a **Human-Machine Interface** to allow users to interact with the Programmable Logic Controller intuitively.

SmartFinance *Jul. 2025 – Aug. 2025*

- Reviewed business plans and assisted clients in securing government funding.
- Gained exposure to **M&A** processes, **financial documentation**, and **accounting**.