# Emil Sebastian Jino

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## Education

- **University Of Bristol** — Bristol, UK
  *MEng Computer Science* — *Sept. 2020 – July. 2024*
  - **Predicted First Class Honours**:
- **Bishop Vaughan Sixth Form** — Swansea, UK
  *A levels* — *Sept. 2018 – June. 2020*
  - **Maths(A*), Biology(A*) and Physics(A)**:

## Experience

- **University of Bristol** — Bristol, UK
  *Graduate Teacher(Level 2)* — *Sept. 2023 - May. 2024*
  - Providing targeted academic support to a group of 5 students in a second-year course. Cover approximately 30% of the main course content in the supplemental teaching sessions, such as how to utilise **Github** for code management.
- **University of Bristol** — Bristol, UK
  *Software Development Team Member* — *Sept. 2021 - April. 2022*
  - Created a video connection system for Gromit sculptures across the city, as requested by the university.
  - Enhanced front-end UI by dynamically resizing and customizing content based on window size through **Javascript**.
  - Used **Github** to manage version control, track progress via a Kanban board, and resolve issues to improve code clarity.

## Programming Skills

- **Languages**: Python, Java, C#, C, C++, GO, JavaScript, HTML, CSS
- **Technologies**: AWS, Git, MS Suite, Unity
- **Frameworks**: React.js, NumPy, PyTorch, Pandas

## Projects

- **Applied Deep Learning**:
  - **Replicated and enhanced Dieleman et al.'s CNN architecture** for music tagging, achieving an AUC score increase from 0.74 to 0.80, using the MagnaTagATune dataset and advanced preprocessing (**Python**).
  - **Optimized hyperparameters** to achieve a peak AUC score of **0.8274**, demonstrating proficiency in tuning deep learning models for music information retrieval.
  - **Improved model robustness and accuracy**, achieving an AUC score of **0.8433** through strategic dropout and batch normalization, effectively reducing overfitting.
- **Stock Exchange Simulator (BSE)**:
  - Conducted comprehensive simulations on the **Bristol Stock Exchange (BSE)** to assess the profitability of various trading agents **(ZIP, ZIC, SHVR, GVWY, ZIPSH)**, comparing against each other through strategic limit price settings.
  - Utilized advanced statistical tests to **validate the profitability** of different trading strategies, confirming the superior performance of selected agents.
  - Demonstrated proficiency in **Python** and financial simulations, showcasing the ability to analyze and interpret complex trading algorithms in a simulated stock exchange environment.
- **VR-Games Project**:
  - Produced 'Marco Predatoro,' a mixed-reality game, integrating **two physical spaces** into one **VR** game environment, allowing interactions between game spaces, such as power-ups or attacks.
  - Implemented body tracking from **2 synchronised** Azure Kinect Cameras, with data networked across 3 systems **(VR,Physical space and AR)** using **Photon PUN2**
  - Made **custom models** and **3D scenes/assets** with custom shaders to improve viewer appeal.
  - Game designed in **Unity** and **C#** used for over 30 custom scripts.
- **3D Graphics Renderer**:
  - Created a 3D rendered image using **C++**, built from the ground up without existing frameworks except **GLM and SDL2**.
  - Program renders Cornell Box using techniques such as **wireframe rendering, rasterising** and **ray tracing**.
- **Conway's Game of Life with Distributed System**:
  - Co-developed Conway's Game of Life, using **GO's goroutines** to design a **multi-threaded** game implementation.
  - Completed a distributed systems solution of the game, hosted on **AWS**, which allowed a **2.94x** decrease in runtime compared to a serial implementation.