Zaher Faruk

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EDUCATION

The University of Salford   Salford, England
BSc in Physics   *Expected July 2025*

Ashton Sixth Form College   Ashton-under-Lyne, England
A Levels in Maths, Physics and Computer Science   *September 2020 – July 2022*

PROJECTS

Producing and Engineering a Drone | *C ++, Fusion 360, Arduino, Tinkercad*   September 2023 – June 2024
- Arduino Programming: Developed and programmed the drone's flight control system using Arduino, implementing real-time control algorithms using C++
- Circuit Design and Hardware Assembly: Designed and assembled the drone's electronic components, including the motors, ESCs, and flight controller
- CAD modelling with Fusion 360: Designed and modelled custom drone parts using Fusion 360 to ensure precise fit and functionality
- Troubleshooting and Debugging: Diagnosed and resolved hardware issues with the Arduino chip and software issues in C++ during the testing and development phase

Programming Quantum Computers | *IBM Quantum, PennyLane, Microsoft Azure*   October 2024 – Present
- Gained hands-on experience with a variety of quantum technologies, including superconducting qubits (IBM Quantum), photonic systems (Xanadu), trapped ions (IonQ), and quantum annealing (D-Wave) as part of my third year research project at university

Non-Analytic Basins and Chaotic System Simulation | *MATLAB*   September 2024 – October 2024
- Numerical Solution Using ODE Solver: Used MATLAB's ode45 function to numerically solve the ODEs for both original and perturbed initial conditions over a defined time span
- Visualisation of Chaotic Dynamics: Generated time-series plots to illustrate the sensitivity to initial conditions and a 3D plot to visualise the chaotic attractor in phase space

Lennard-Jones Potential Plotting | *Python, NumPy, Matplotlib*   October 2023 – November 2024
- Data Processing and Analysis: Loaded and processed atomic separation and potential energy data from CSV files using Pandas for data manipulation
- Mathematical Modelling: Calculated the Lennard-Jones potential values using NumPy, implementing the potential energy formula to model interatomic forces
- Data Visualisation: Plotted experimental data and theoretical potential curve using Matplotlib, comparing atomic separation with potential energy
- Algorithm Optimisation: Utilised NumPy's linspace to generate smooth, high-resolution data points for accurate visualisation of potential curves

EXPERIENCE

Computer Technician   September 2018 – August 2019
Microtech Computers   *Ashton-under-Lyne, England*
- Operating System Installation: Installed and configured operating systems via BIOS, ensuring smooth setup and performance
- System Testing: Performed post-repair tests to verify system stability and ensure that repairs were successful

HOBBIES

Gaming has been a passion of mine since childhood, sparked by memories of playing Tekken 6 on the PS3. That love for competition and strategy still drives me today as I play Tekken 8, but it has also pushed me beyond gaming—leading me to explore Kyokushin Karate and MMA, where I channel the same discipline and thrill into real-world combat sports.