Jacob Stephens

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Education

BSc (Hons) Computer Science, University of Nottingham *Expected Jul 2025*
Expected Grade: 1:1
Final-Year Project: *Reinforcement Learning for Dual-Robot Deformable Object Manipulation*
- Completed modules in artificial intelligence, software development, mathematics, algorithms and cybersecurity.
- Contributed to the professional development of a web-based carpooling system, applying full-stack software engineering principles in a collaborative team environment.

Diploma in Computer Science, University College Birmingham *Sep 2021 – Jul 2022*
Grade: Distinction
- Built a foundation in problem-solving and object-oriented programming using Python and Java.
- Worked with SQL databases and developed dynamic websites using HTML, CSS and PHP.

Experience

Software Developer - University of Nottingham *Sep 2023 – Jun 2024*

- Built *Ecomute*, a carpooling web app developed for Eviden to continue internally.
- Held regular client meetings to gather requirements, present progress and refine features.
- Used HTML, CSS, JavaScript, Node.js and AWS for full-stack development and deployment.
- Worked in an Agile Scrum team, contributing to sprint planning and using Git for co-ordination.

CNC Programmer – Hazlin of Ludlow Ltd *Jan 2019 – Aug 2021*

- Programmed and operated CNC machines to manufacture precision-engineered components to exact specifications.
- Worked to production deadlines while maintaining consistency, efficiency and quality across batch outputs.
- Operated in a fast-paced environment requiring accuracy and application of engineering principles.

Projects

Ecomute – Carpooling Application
Developed a responsive web app using HTML, CSS, JavaScript, Node.js and AWS. Used Python to implement pathfinding algorithms for route optimisation. Applied user-centred design principles, including human–computer interaction (HCI) concepts.

Multi-Agent Reinforcement Learning Dissertation
Built a custom multi-agent simulation in MuJoCo, using RLlib. Used Soft Actor-Critic (SAC) to train two robotic arms to manipulate a deformable linear object (DLO) toward moving targets, following the CTCE framework for cooperative task completion.

Technical Skills

- **Languages:** Python, Java, R, C++, JavaScript, MATLAB
- **Web:** HTML, CSS, Node.js, PHP, React (basic)
- **Cloud/Tools:** AWS (basic), Git, Linux
- **ML & AI:** PyTorch, TensorFlow, NumPy, Gymnasium
- **Reinforcement Learning:** RLlib, Gymnasium
- **Concepts:** Statistics, Machine Learning, Reinforcement Learning, Robotics
- **Workflow:** Agile Methodologies, Project Management, Team Collaboration, Client Communication

Interests

- Building machine learning models and creating practical applications to solve complex problems and explore new ideas.
- Personal development through reading, online learning and upskilling in both technical and non-technical areas.
- Recreational cyclist with an interest in exploring rural routes and maintaining physical fitness.
- Full UK driving licence holder.