Harry Clemence

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WORK EXPERIENCE

University of Oxford   **March 2025 – September 2025**
Software Engineer   *Oxford, Oxfordshire*

- Developed a digital twin web application to simulate and monitor the condition of Blenheim Palace as part of an academic–heritage partnership.
- Independently designed and implemented the user interface using TypeScript, React, and CesiumJS, enabling users to visualise and report sensor and survey data directly on a 3D model.
- Built endpoints to serve real-time IoT data and structured survey information from a PostgreSQL database.
- Implemented image upload functionality by AWS S3 and implemented a secure user authentication system.
- Deployed the application using CI/CD workflows via GitHub Actions and hosted it on Vercel.

Blenheim Palace   **July 2024 – September 2024**
Data Scientist   *Woodstock, Oxfordshire*

- Built a predictive AI model in Python to schedule customer-facing staff based on demand forecasts.
    - Integrated the model into Blenheim's Smart Visitor Management system (Power BI) to support staff budgeting using visitor forecasts.
    - Collaborated with Oxford Brookes researchers and senior stakeholders (CFO, MD) to communicate strategies using data visualisations.
    - Used Python libraries for ML (e.g. Scikit-learn, TensorFlow) and visualisation (e.g. Matplotlib, Seaborn).
- Improved the visitor prediction model's accuracy by up to 20% by enhancing feature extraction from event patterns and durations.

PROJECTS

Frontend Re-build for Consolidate.org.uk

- Built a responsive landing page, about page and database pages according to Figma prototypes. Used a stack of Svelte, TypeScript, HTML and PostgreSQL.

EDUCATION

University of Birmingham   **2020 – 2023**
2:1 BSc Computer Science

- Final Year Project involved the design and implementation of a Drum Machine React application with a Node.js (Express) REST API. Integrated a Generative Neural Network (VAE) to apply a humanised groove to a drum track.
- Completed module in Object-Oriented Programming (OOP) in Java and studied SQL and JavaScript as part of a Full Stack Development module.

Magdalen College School   **2015 – 2020**

- A-Levels: Maths (A*), Physics (A), Economics (A), Further Maths (B)