Ellie Vallard

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Education

BSc Computer Science - 1st Class Hons. **Sep 2020 - Aug 2025**

University of Exeter (Russel Group) *Exeter, Devon*

Relevant Modules OOP | Enterprise Computing | C Language Family | Database Theory and Design

Skills

Programming Languages Python | C | C# | C++ | Java | SQL/MySQL

Technologies Git | Visual Studio | Office Suite

Experience

Siege.rip Web Platform **Jun 2024 – Present**

Backend Engineering and Database Design

- Contributed to the backend development of *siege.rip*, a web platform enabling users to view their in-game inventories and stats for the game *Rainbow Six Siege*.
- Designed and maintained relational database structures with SQL to store items, user accounts, and game profiles, ensuring efficient data retrieval and consistency across multiple entity relationships.
- Developed and integrated RESTful APIs to support dynamic profile updates, inventory synchronization, and external site uploads without direct user interaction, improving automation and system scalability.

Notable Projects

Nintendo 64 Decompilation Projects **Mar 2022 - Present**

Reverse Engineering and Software Development

- Planned and managed the full redevelopment workflow, defining build systems, coding standards, and CI/CD pipelines to ensure reliable integration, reproducibility, and maintainability.
- Applied systematic reverse-engineering techniques to translate low-level system code into C, validating correctness through binary-level comparison and functional testing on original N64 hardware.
- Implemented robust source control practices using Git and GitHub, overseeing branching, reviews, and merge approvals gated by automated build and correctness checks.

Jump King Plus - Gaming Mod Team **Mar 2021 - Feb 2024**

Feature Developer

- Collaborated remotely with a four-person development team to design and implement C# gameplay extensions and tools for the game *Jump King*.
- Solo developed further gameplay mods and mechanics in C#, including various quality-of-life enhancements for the early community modding frameworks.
- The project was endorsed by the original developers and later merged into the official modding framework, demonstrating code quality and community impact.

Undergraduate Dissertation (Graded as a First) **Dec 2024 - Aug 2025**

Data Analysis and Network Modelling

- Modelled *Speedrun.com* as a large-scale bipartite network to investigate relationships between players and games, leveraging computational social science and network theory.
- Designed and maintained a relational database using MySQL, importing and cleaning millions of data points from the Speedrun.com API.
- Developed and optimised SQL queries to aggregate, filter, and cross-reference datasets efficiently for network construction and statistical analysis.