

# Aaryaman Sharma

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## Education

### University College London (UCL)

BSc Computer Science, First-Class Honours

Sept 2021 – June 2024  
London, United Kingdom

- Relevant Modules: Systems Engineering, Algorithms, Security, Financial Management
- Dissertation: *"Generating Novel Motions Based on a Single Training Example"*

## Experience

### Software Engineer Intern

Expedia Group

June 2023 – Sept 2023  
London, United Kingdom

- Engineered a performance analytics tool for web applications in Node.js, enabling measurement of core web vitals and automating the blocking of GitHub pull requests upon degradation detection
- Implemented anomaly detection, reducing false positive rates of performance degradations by 20%
- Enhanced logs by providing performance improvement suggestions based on specific degradation causes
- Designed a front-end prototype in Figma to visualize performance history over time and led cross-departmental demos to assess suitability and gather feedback
- Developed a front-end using native web components with Google Lit and deployed it for internal company use

### Software Engineer Intern

Qatar Museums

June 2022 – Sept 2022  
Doha, Qatar

- Developed a user-friendly GUI tool in Python for staff to efficiently manage digital assets, metadata, manifest files, and data imports
- Integrated functionalities for sending email notifications upon job completion, enhancing communication and workflow efficiency
- Contributed to asset knowledge mining tool by testing object detection for museum artwork using YOLOv5

## Projects

### WebGL 3D Shader [↗](#)

- Developed a 3D shader from scratch in GLSL, implementing ray-tracing, rasterization, and path-tracing techniques
- Enabled real-time visualization of advanced rendering methods directly in the browser
- Incorporated real-time animation to demonstrate path-tracing progress and animated ray-traced objects

### Touchless Kiosks [↗](#)

- Designed and developed a touchless hospital kiosk interface using MediaPipe and React, enabling hand gesture input for webpage navigation
- Implemented touchless navigation and live gesture previews, with a WebExtension frontend for seamless integration
- Demonstrated the system at Great Ormond Street Hospital and incorporated feedback to enhance accessibility features
- Enabled installation as a browser sidebar extension, showcasing live previews of user gestures and interactions

### Jellyfin Plugin

- Developed an artwork and metadata scraping plugin in C# and JavaScript for the open-source media library manager Jellyfin
- Collaborated with open-source contributors on GitHub, discussing feature requests, implementations, and managing pull requests

### Set Permutation Generator [↗](#)

- Built a Django-based revision tool for discrete math students to generate and analyze set permutations in Cauchy's two-line notation
- Enabled functionality to compute the order, sign, and cyclic form of permutations, providing detailed problem-solving capabilities

## Skills

**Languages:** Python, JavaScript, TypeScript, C#, Java, C, GLSL, HTML, CSS

**Frameworks/Libraries:** React, Node.js, Lit, Django, Flask

**Development:** Git, SQL, PostgreSQL, Docker, Figma