Gabrielle Maciunaite

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Education

University of Warwick — Coventry, UK
BSc Computer Science (Expected Graduation: July 2028) — *Sep 2025 – Present*

- **Academic Standing:** First Year: 2:1
- **Key Modules & Coursework:** Data Structures & Algorithms **(Java)**, Functional Programming **(Haskell)**, Computer Architecture **(C)**, Logic & Automata **(Python)**

Cardinal Newman Catholic School — Hove, UK
A-Levels & GCSEs — *Sep 2023 – Jun 2025*

- **A-Levels:** Mathematics (A*), Computer Science (A*), Physics (A), Further Mathematics (AS: A)
- **GCSEs:** 10 GCSEs 9–8, including Mathematics (9), Computer Science (9), and English Language (8)

Projects

Distributed Fault-Tolerant Rate Limiter – (GitHub) — 2026
TypeScript, Node.js, Express, Redis, Lua, Vitest, Autocannon

- Built custom Express middleware in TypeScript, implementing a sliding-window counter algorithm and IP penalty boxing via atomic Redis Lua scripts.
- Designed a circuit breaker class with fail-open fallback to an in-memory fixed-window counter, preserving availability during Redis downtime.
- Benchmarked locally at ~4,800 RPS at 3.66ms average latency via Autocannon; validated HTTP 429 semantics and circuit breaker recovery using Vitest test suites.

Social Running & Analytics Web App – (GitHub) — 2026
Python, Flask, Docker, PostgreSQL, Redis, Celery, REST APIs

- Developed a full-stack running analytics app using Flask and PostgreSQL, integrating OAuth 2.0 to process health and wellness data from the Google Fit REST API and Gemini API to generate personalized training plans.
- Implemented Celery workers and a Redis message broker to asynchronously fetch and process Google Fit API data, preventing third-party I/O latency from degrading web server response times.
- Designed a real-time friends leaderboard using Redis Sorted Sets (ZSETs) for $O(\log N)$ ranking and range queries.
- Containerized services with Docker Compose and deployed the full stack (web, workers, PostgreSQL, Redis) to Render.

Pomodoro Timer & Site-Blocker Extension – (GitHub) — 2026
JavaScript (ES6+), WebExtensions API, HTML5/CSS3

- Developed a lightweight Manifest V3 browser extension providing custom domain blacklisting and regex filtering to block distractions during focus intervals.
- Architected persistent timers using Chrome Alarms API and service workers, preserving active countdown state during popup inactivity and delivering desktop alerts.

Extracurricular & Leadership

Cardinal Newman Sixth Form — Hove, UK
Academic Council Leader – Computer Science — *Sep 2024 – Jun 2025*

- Awarded **Highest Achiever for Computer Science** across graduating cohort for top academic performance.
- Served as CS Student Representative on the Academic Council to collaborate with faculty on curriculum decisions and lead outreach initiatives to increase female student engagement in computing.
- Provided in-class academic support for GCSE and A-Level students in computing, guiding students through problem-solving, syntax debugging, and algorithm design.

Technical Skills

Languages: TypeScript, Python, Java, SQL, Lua, Haskell, JavaScript, HTML5/CSS3
Frameworks & Databases: Flask, PostgreSQL, Redis, Celery, RESTful APIs, Node.js, Express
Developer Tools: Docker, Docker Compose, Git, GitHub, Linux/Unix, Vitest, Autocannon