Patrick Mermelstein Lyons

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Education

The University of Manchester   Sep. 2022 – Present
First Class (71%) - Bachelor of Science in Computer Science.   Manchester, UK

Sutton Grammar School   Sep. 2020 – Jun. 2022
A*, A*, A* and A achieved in Computer Science, Mathematics, Spanish, and Physics.   Sutton, UK

The Howard of Effingham School   Feb. 2016 – Jun. 2020
Nine 9s, one 6 and one 7 achieved at GCSE level.   Effingham, UK

Relevant Experience

Barclays   Jun. 2024 – Aug. 2024
Technology Developer Intern   Knutsford, UK

- Developed a novel dashboard for Barclays's quarterly planning increment events as part of the organization's transition to an Agile framework.
- Incorporated data extraction, manipulation, and visualisation to create 8 metrics that Jira Server is unable to provide.
- Implemented ReactJS, TypeScript, Git, and the Jira API, achieving 90% test coverage and integrating seamlessly into Barclays's technology ecosystem.
- Communicated with stakeholders to adhere to strict regulatory standards, user needs, and engineering practices.

PI Prepare Intellectually   Aug. 2023 – Sep. 2023
Full Stack Developer   Remote

- Contributed to the design of PI's front-end using Figma, collaborating with a team of 3 developers to create user-friendly interfaces.
- Conducted research to support project requirements and development planning, ensuring alignment with best practices and client needs.
- Designed user experiences and collaborated with team members to enhance webpages.

Projects

AI Study Companion | *GPTs, Open WebUI, Ollama*   **Ongoing Final Year Project**

- Designing a pedagogically effective tutoring system leveraging GPT technology to enhance learning outcomes.
- Focusing on GPT safeguarding and prompt engineering to ensure effectiveness.
- Implementing cutting edge AI and education research into a further education student companion.
- Seamlessly integrating functionality into LMS platforms like Blackboard Learn.
- Explored scalability to other chargeable consumer devices such as EVs and laptops.

BeHeard Web App | *Flask, Python, MySQL, Spotify API*   Mar. 2023

- Collaborated with a team of 5 peers to develop an original social media platform using Flask and the Spotify API.
- Implemented secure OAuth authorization for user authentication with Spotify accounts.
- Designed and managed the MySQL database for user profiles and app content.
- Leveraged the Spotify API to incorporate key features and enhance functionality.

School Routing System | *Java, JUnit, SQLite*   May. 2022

- Created a Java application for providing efficient directions within the school premises.
- Stored 100+ rows of map data using SQLite and applied Dijkstra's pathfinding algorithm to generate an optimal route.
- Employed test-driven development techniques with JUnit to ensure code quality.
- Documented the development process with ongoing and reflective technical reporting.

Relevant Course Modules

- Artificial Intelligence
- Software Development
- Machine Learning
- Natural Language Processing
- Database Systems
- Operating Systems
- Advanced Distributed Systems
- User Experience
- Computer Engineering

Technical Skills

Programming Languages: Python, Java, TypeScript, SQL, JavaScript, HTML/CSS, C, C++.
Tools & Frameworks: React, Git, Gitlab CI/CD, Jupyter, Spring Boot, Jenkins, Docker, JUnit, BitBucket, Jira, Jira API, Confluence, VS Code, Flask, scikit-learn, NLTK.
Operating Systems & Platforms: Linux, Bash, Windows Server, PowerShell.

Extracurricular Activities

- **Captain, University of Manchester Volleyball Club** - Lead team training, organize strategies for competitions, and collaborate with sports committees.
- **Member, University Tennis Society** - Participate in practice sessions and intramural competitions, building teamwork and skills.
- **Social Salsa Dancer** - Attend social events and classes, engaging with a diverse community and enhancing dance skills.

Other Experience

GreatUniHack   **Nov. 2022 – Nov. 2024**
Mentor   *Manchester, UK*

- Served as a mentor for the GreatUniHack hackathon, guiding and supporting participants throughout the event.
- Evaluated 10+ project presentations and provided constructive feedback to help teams improve solutions.
- Influenced the success of the competition by contributing expertise and fostering a supportive atmosphere.

Fat Bob's Thin Crust   **Aug. 2020 – Sep. 2022**
Cook   *Ashtead, UK*

- Managed opening and closing operations, stock management, security protocols, and cleaning.
- Coordinated multiple order intake services and team members to deliver consistent products within short time frames, maintaining efficiency and quality.
- Conducted and monitored food safety checks on equipment and appliances, ensuring compliance with legal and safety standards.

Spotify   **Jun. 2020**
Digital Marketing Work Experience   *Remote*

- Gained an understanding of Spotify's use of user data to customize service recommendations.
- Learned how targeted advertising based on data analysis can manipulate user behaviour.
- Designed and presented a collaborative marketing campaign proposition for a Netflix release.

Surrey Libraries   **Nov. 2019 – Feb. 2020**
Volunteer Assistant Librarian   *Leatherhead, UK*

- Arranged and delivered introductory programming lessons for young library learners.
- Managed customer requests and assisted the library network distribution system.

Other Projects

Green Dreams | *C++, Sony Spresense, Carbon Intensity API*   **Jun. 2023**

- Placed as joint fourth best team from 50+ entrants at the University of Manchester Sony Hackathon.
- Built a prototype smart plug that optimises device charging in low carbon emission time slots.
- Forecasted potential annual reduction of 20,000 tons of carbon dioxide if widely adopted.
- Explored scalability to other chargeable consumer devices such as EVs and laptops.

CyberCenturion VII Competition | *Ubuntu, Windows 10, Windows Server*   **2020 — 2021**

- Led a team of 4 students to a 12th place finish out of 200+ teams in the CyberCenturion tournament.
- Detected and rectified security breaches on three compromised instances of different operating systems.

Social Media Bot | *Python, Reddit API, Instagram API, Ubuntu Server*   **Jun. 2019**

- Developed an automated bot using Python to extract media content from Reddit and upload to Instagram.
- Automated program execution for periodic updates using an Ubuntu server, improving system efficiency and reducing manual intervention.