

# Josephine Burke

(+1)301-233-2678 or (+353)083-366-4059 | [josierb18@gmail.com](mailto:josierb18@gmail.com) | [linkedin.com/in/josieburke](https://www.linkedin.com/in/josieburke) | [github.com/Josierb](https://github.com/Josierb)

## EDUCATION

---

### University College Dublin

*BA in Computer Science with Data Science*

- Clubs: Lacrosse, Networking Soc, Women in STEM, Sub-Aqua, AI in Medicine.

Dublin, Ireland

*Sept 2023 – present*

### University of Maryland, College Park

*Young Scholars High School Program*

- Earned an A and 3 college credits in International Political Relations.

College Park, MD

*June 2022 – July 2022*

### Saint John's College High School

*High School Diploma*

Washington, D.C.

*Sept 2019 – May 2023*

## EXPERIENCE

---

### United States Marshals Service Internship

June 2025 – Aug 2025

*Investigative Operations Division — Behavioral Analysis Unit*

- Developed a Python-based investigative dashboard (Dash/Plotly) to automate analysis of complex case folders with thousands of heterogeneous files.
- Implemented file-type summarization, storage usage visualization, and advanced search (exact, case-insensitive, fuzzy).
- Built NLP pipelines (spaCy, regex) to extract entities (names, locations, emails, phone numbers) and integrated geographic visualizations.
- Reduced manual review time by delivering interactive filters, entity network graphs, and geospatial dashboards.
- Continuing to advise the USMS to help integrate and expand on this codebase for future investigative use.

### Quantum Computing Research

July 2022 – Aug 2022

- Designed and ran quantum circuits using IBM's Quantum Platform with Professor Sebastian Deffner (UMBC).
- Presented research on entanglement-assisted invariance to leaders in the quantum field.

## PROJECTS

---

**Projects include but are not limited to:**

**Software Engineering — Eclipse, C** — Developed a C program to dynamically sort and shuffle user-provided songs; collaborated on an interactive Gantt chart tool and a board viewer built with linked lists; applied C unit testing to ensure program reliability.

**Software Engineering II — IntelliJ, JavaFX** — Led group development of HexOust, a JavaFX-based board game; contributed to planning, architecture design, and successful A-grade implementation.

## TECHNICAL SKILLS

---

**Languages:** Java, Python, C, SQL, HTML/CSS, Scheme

**Frameworks & Tools:** Dash, Plotly, dash-cytoscape, spaCy, Git/GitHub/GitLab, VS Code, IntelliJ, Eclipse, Jupyter

**Databases & Search:** MySQL, Elasticsearch    **Testing:** JUnit, CUnit

**NLP & Text Analytics:** spaCy, rapidfuzz, pycountry, country converter

## CERTIFICATES

---

**Elasticsearch — Udemy** — Hands-on labs with index design, mappings/analyzers, DSL queries, and aggregations; built Kibana dashboards and ingested data via the Python client.

**Introduction to Artificial Intelligence — The Coding School (TRAIN)** — Implemented foundational ML models (linear regression, decision trees) in Python; examined AI ethics and bias.

**Introduction to Quantum Computing — The Coding School (Qubit by Qubit)** — Built and ran quantum circuits in Qiskit; applied error-correction algorithms on IBM's Quantum Platform.

**Babysitting Basics — American Red Cross** — Completed foundational childcare and safety training.

## ADDITIONAL EXPERIENCE & ACTIVITIES

---

**Technical Officer, UCD AI in Medicine Society** — Coordinate events and manage technical operations, including sourcing speakers and designing events for students with technical backgrounds.

**Child Care** — Provided long-term childcare for a family with three young children for 4+ years, including travel to Maine.

**Cybersecurity CTFs** — Ranked in open category at Zero-Days Dublin; competed at University of Galway CTF.

**Ireland Lacrosse** — Represented Ireland in European Championships and She-box Tournament.

Learn more about me: <https://josierb.github.io/applications/>