

Josephine Burke

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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

EXPERIENCE

United States Marshals Service Internship

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.

June 2025 – Aug 2025

Quantum Computing Research

- 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.

July 2022 – Aug 2022

PROJECTS

Software Engineering | *Eclipse, GitHub, GitLab, 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.

Jan 2023 – May 2023

Software Engineering II | *IntelliJ, GitHub, GitLab, JavaFX*

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

Jan 2024 – May 2024

TECHNICAL SKILLS

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

Dashboards & Visualization: Dash, Plotly, dash-bootstrap-components, dash-cytoscape, Streamlit

Data Extraction & Processing: PyPDF2, pdfminer, python-docx, python-pptx, openpyxl, textract, striptrf, extract-msg, BeautifulSoup, lxml

NLP & Text Analytics: spaCy, rapidfuzz, pycountry, country_converter, us

Testing: JUnit

Developer Tools: Git, GitHub, GitLab, VS Code, PyCharm, IntelliJ, Eclipse, SceneBuilder, Jupyter Notebook, venv, Kibana

Databases & Search: MySQL, Elasticsearch

CERTIFICATES

Elasticsearch

Sept 2025

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

Sept 2022 – Apr 2023

The Coding School

TRAIN

- Implemented foundational ML models (linear regression, decision trees) in Python; examined AI ethics and bias.

Introduction to Quantum Computing

Sept 2021 – Apr 2022

The Coding School

Qubit by Qubit

- Built and ran quantum circuits in Qiskit; applied error-correction algorithms on IBM's Quantum Platform.

Babysitting Basics

Aug 2018

American Red Cross

- Completed foundational childcare and safety training.

ADDITIONAL EXPERIENCE & ACTIVITIES

Child Care

June 2021 – present

- Provided long-term childcare for a family with three young children.

Cybersecurity CTF Events

Feb 2025 – present

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

Ireland Lacrosse

Feb 2024 – present

- Represented Ireland in the European Lacrosse Championships (Portugal) and She-box Tournament (Czech Republic).