Alex Badia

845-475-1080 | abadia2@illinois.edu | alexbadia.com | linkedin.com/in/alex-badia | github.com/alexbadia1

Education

University of Illinois at Urbana-Champaign — Champaign, IL
*Master of Computer Science — **GPA**: 3.83/4.00* — *Aug 2023 – Expected Dec 2024*

Marist College — Poughkeepsie, NY
*B.S. Computer Science & Cybersecurity — Summa Cum Laude, **GPA**: 3.92/4.00* — *Aug 2018 – May 2022*

- **Leadership**: Cybersecurity Club Founder, Computer Science Club President, Data Analytics Club President
- **Scholarships**: Greystone Technology Award (**$20K+**), Presidential Scholarship (**$20K+**), Hudson Valley Scholarship

Skills

Languages:	C++, Java, Python, JavaScript, TypeScript, Dart, HTML, CSS, SASS, SQL
Frontend:	React, Angular, Flutter, Bootstrap, Material UI, Tailwind, Selenium
Backend:	ExpressJS, Firebase, Flask, Microsoft SQL Server, MySQL, MongoDB, Spring Boot
Other:	Amazon Web Services, Bitbucket, Docker, GitLab, Helm, Kubernetes, Linux, TeamCity, Virtual Machines

Experience

Numerix — Oct 2022 — Aug 2023
Fullstack Software Engineer — *New York, NY*

- Spearheaded the migration of a development environment from an on-premises **Kubernetes** cluster to **AWS ECS** with a focus on optimizing costs by **auto-scaling** and pruning extraneous microservices
- Improved performance by **80%+** by caching (**Redis**) frequent calculations and debouncing redundant UI requests
- Accelerated product development for financial engineers by creating new and streamlining existing internal UIs (**React**)
- Enhanced data visualization capabilities for the flagship product, Numerix Oneview, using **Snowflake** and **Tableau**

Bank of New York Mellon — Jun 2022 — Aug 2022
Summer Associate - Senior Intern — *New York, NY*

- Increased robustness of an API registry for **3K+** microservices (**Angular**, **Flask**) by resolving critical bugs
- Reviewed **API designs** in bi-weekly architecture meetings as part of the approval process for new software projects
- Built an **Eclipse** plugin (**Java**) that provides real-time internal API documentation for **10K+** endpoints through code completion, context-aware navigation, and intelligent code hints while achieving **90%+** code coverage with **SonarQube**

Canon — Jan 2022 — May 2022
Fullstack Software Engineer Intern — *New York, NY*

- One of two interns for Canon Business Process Services **first-ever internship program**
- Developed a document processing application with functionalities for uploading, splitting PDFs, highlighting text, adding annotations, and reading barcodes, using a **.NET** backend with **DocuVieware** and a **React/Redux** frontend

Concourse Labs — Jan 2022 — May 2022
Associate Backend Software Engineer — *New York, NY*

- **Acquired** in January 2024 by **Fortinet** and rebranded to FortiCSPM (Cloud Security Posture Management)
- Eliminated manual deployment of microservices (**Spring Boot**) to **AWS EKS** development environments with **GitLab CI/CD pipelines** to automates tests (across **Bazel**, **Gradle**, **Maven**), **Docker** image builds, and **Helm** deployments
- Debugged multi-cloud (**AWS**, **Azure**, **GCP**) infrastructure configuration polling microservices with **Postman**

Projects

Diagram-driven Cloud Infrastructure Tool (HackIllinois Finalist 2024) — View Project

- Led a team of 3 students to the **top 3 finalists** out of **24+** projects and **340+** contestants at HackIllinois 2024
- Developed a cloud infrastructure tool that generates Terraform code from a user-created diagram using Next.js

Quantum Computing: Distributed Denial of Service Attack Detection — View Project

- Conducted research that identified denial of service traffic in honeypot network hive-plot graphs with **90%+** accuracy using the Max-Cut Algorithm, Quantum Approximate Optimization Algorithm, and IBM Qiskit

Browser-based Operating System and Compiler — View Project

- Built a browser-based compiler that translates high-level language source code into 6502a machine code, which runs on a browser-based multitasking operating system equipped with a shell, CPU, file system, scheduler, and memory

Maple Juice (Hadoop Clone) — View Project

- Built a scalable distributed MapReduce framework, featuring a fault-tolerant distributed file system with gossip failure detection, passive replication, bully leader election, a distributed log querier, and an SQL layer