Graham Patterson

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EDUCATION

Columbia University — **New York, New York**
Bachelor of Arts in Computer Science, Magna Cum Laude — *Fall '15 - Spring '19*

- Honors: Dean's List ('16, '17, '18 academic years), D.E. Shaw Group Nexus Fellow (Summer '17)
- Andrew P. Kosoresow Memorial Award for Excellence in Teaching and Service
- Coauthored *Egalito: Layout-Agnostic Binary Recompilation*

EXPERIENCE

Bloomberg LP — **New York, New York**
Software Engineer — *July 2019 - Present*

- Engineering lead for new Python microservices from early design to production deployment with full ownership of software architecture, SDLC, CI/CD, and monitoring of these new data services
- Decomposed C++ monoliths into microservices while maintaining business continuity and feature enhancement
- Advocate for modern CI/CD practices by integrating Jenkins pipelines into both legacy and new assets
- Mentor new hire engineers by planning new projects, providing 1-1 feedback, and facilitating professional and technical growth by cultivating both team, engineering, and company culture
- Active in engineering recruiting as Campus Captain for Columbia University and conducting technical interviews

Software Engineering Intern — *May 2018 - August 2018*

- Collaborated with network engineers to design, implement, and deploy an interactive single-page web app used in diagnosis of Bloomberg's private global network by 34,000 additions to an existing code base over 129 commits and 41 merged pull requests
- Designed and implemented a client-side algorithm for analyzing changes in large amounts of historical data

Columbia University, Software Systems Lab — **New York, New York**
Research Assistant — *Fall 2018 - July 2019*

- Contributed to a binary rewriting framework that combines static and dynamic techniques and compiler metadata to implement various binary level security features and optimizations of a target program on x86_64 and aarch64
- Research culminated in a coauthored paper published in ASPLOS '20

Columbia University, Department of Computer Science — **New York, New York**
Head Teaching Assistant, Teaching Assistant — *May 2017 - July 2019*

- Classes: Design Using C++ with Bjarne Stroustrup, Introduction to Computer Science Programming in Java, and Computing in Context (Python)
- Lead recitations on Java and Python programming languages, Monte-Carlo simulations, financial models, and computer science fundamentals

United States Marine Corps, Embassy Security Group — **Various Locations**
Operations Officer, Sergeant — *June 2009 - October 2014*

- Lead 14 Marines in daily operations and provided occupational expertise and leadership
- Provided armed internal security, personnel security, and access control at several U.S. diplomatic missions including Kabul, Afghanistan; London, England; Santo Domingo, Dominican Republic

PROJECTS

Distributed Systems – Go — *Fall '18*

- Implemented a Paxos library and client facing key-value store, providing a fault tolerant and replicated storage service

Linunx Kernel 4.9.81 – C — *Spring '18*

- Designed and implemented a stable round-robin scheduler which acted as the default scheduling policy for all processes and kernel threads and a full feature file system including nested directories and links

SKILLS

- Languages: Python, C++, C, Go, Java, Typescript, Javascript
- Frameworks: pytest, gtest, Django
- Tools: git, Jira, Agile/Scrum, UNIX Environments, Jupyter
- Hobbies: homelabs, cooking, archery, and triathlon