Avery Joseph Clapp

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EDUCATION

Johns Hopkins University **Expected May 2026**
Baltimore, Maryland

- Majors: Computer Science (BS), Economics (BA)
- GPA: 3.5/4.0
- Coursework: Networks, Data Structures, Algorithms, Parallel Computing, Operating Systems, Portfolio Management
- Awards: Pistritto Fellowship - $5,000 annual grant to a JHU Computer Science student displaying research excellence

TECHNICAL SKILLS

- **Languages:** Python, C, C++, SQL, TypeScript, JavaScript, Rust, CUDA
- **Frameworks/Libraries:** React.js, Node.js, Pandas, Polars, NumPy, Statsmodels, Dash, FastAPI, DuckDB
- **Technologies/Platforms:** Linux, NeoVim, Git, Jira, AWS, Kubernetes, Docker, gRPC, Bloomberg, CI/CD, Perf, CMake

WORK EXPERIENCE

Single Phase Capital **August 2025 – Present**
Quantitative Developer *Remote*

- Constructed parallel backtesting engine for energy spread strategies across 100+ paths with DuckDB and multiprocessing
- Developed ETL pipeline processing 10k+ daily energy market data points with automated validation and normalization

Johns Hopkins Whiting School of Engineering **September 2024 – Present**
Machine Learning Research Assistant *Baltimore, Maryland*

- Architected CUDA sparse matrix multiplication kernel achieving 41% speedup over NVIDIA's SoTA cuBLAS implementation through pattern-based compression and warp-level optimization, reaching near-theoretical memory bandwidth
- Optimized GPU memory hierarchy via compile-time template specialization and cache-aware tiling, leveraging vectorized float4 loads, bank-conflict-free shared memory access, and register blocking to maximize instruction-level parallelism

Garda Capital Partners **June 2025 – August 2025**
Software Engineer Intern *New York City, New York*

- Streamlined work of 60+ portfolio managers and traders through overhaul of critical data-intensive Dash application, utilizing Pandas, gRPC services, and REST APIs to facilitate the communication of 500,000+ data points in real-time
- Built complex SQL queries to handle production-level data volumes across distributed systems, aggregating prices, rates, and historical time series across a variety of financial markets while enforcing low-latency data delivery
- Engineered historical VaR pipeline quantifying PM efficiency per unit of risk across $1B+ bond futures exposure
- Migrated firm-wide database layer to async architecture, reducing query latency by 10% for all incoming requests

Institute for Applied Economics **May 2023 – January 2024**
Quantitative Developer *Baltimore, Maryland*

- Created 15+ trading algorithms with proprietary sentiment scores and gold price data to optimize risk-adjusted returns
- Delivered 275% algorithm return improvement through systematic parameter tuning and rigorous quantitative research
- Expanded subscriber base to 500+ paying users by developing a Telegram Bot delivering real-time trade signals

PERSONAL PROJECTS

High-Frequency Orderbook Engine **C++ | Boost**

- Architected low-latency order matching system achieving sub-millisecond execution times, leveraging advanced C++ techniques, memory-optimized algorithms, and object-oriented programming to process 1,800,000+ orders per second

Cache Explorer **C++ | LLVM**

- Engineered LLVM cache profiler parsing compiler IR to extract memory traces from C/C++ code, simulating cache-accurate set-associative L1/L2/L3 hierarchies with LRU/FIFO policies, revealing 50-100x slowdowns from cache-hostile patterns

LEADERSHIP & ACTIVITIES

Johns Hopkins Varsity Swimming, *Team Captain* **August 2022 – Present**

- Coordinated 20 weekly training hours with rigorous course load, achieving 18 NCAA All-American Honors

Student Conduct and Ethics Board, *Selected Member* **April 2024 – September 2025**

- Championed ethical conduct on campus by promoting accountability and respect, leading to fewer code violations

Scouts of America, *Eagle Scout* **September 2015 – May 2021**

- Spearheaded 100-hour service project, coordinating 20+ volunteers and fundraising to renovate local church trail