

JOSEPH GONZALUDO

(301) 708-1386 | josephgonzaludo27@gmail.com | Baltimore, MD | linkedin.com/in/joseph-gonzaludo | github.com/jgonzaludo

SUMMARY

Rising CS senior at Johns Hopkins University with work building derivatives pricing infrastructure and agentic AI tooling in Python, Rust, and TypeScript. Experience spans stochastic optimal control for commodity derivatives, ETRM valuation systems, and volatility analytics for Balyasny. Previously at NASA, Alibaba.

EXPERIENCE

Balyasny Asset Management, LP

Jun. 2026 – Aug. 2026

Summer Associate, Commodities Quantitative Development

New York, NY

- Configured and valued **European gas storage and transport** structures from **Endur (ETRM)**, modeling injection/withdrawal rights under volume and price constraints via backward induction.
- Developed a plugin and **MCP server** exposing the Endur valuations business logic as a callable tool, integrating it into an internal **AI/agentic platform** to enable natural-language querying and automation of storage and transport valuations.
- Extended parameter evaluation logic for a **Least Squares Monte Carlo** simulation pipeline used in stochastic optimal control for commodity derivatives pricing, supporting conditional expectation estimation for path-dependent exercise decisions.

NASA

Apr. 2025 – Sep. 2025

Software Engineering Intern

Greenbelt, MD

- Engineered 5+ production features for the Goddard platform using **React and Python**, cutting manual review time by about 50% through the optimization of distributed **SQL** workflows.
- Diagnosed cross-service failures in complex API environments by tracing malformed requests and data mismatches, implementing automated validation that increased deployment stability.
- Developed Python and SQL scripts to surface architectural defects before rollout, improving operational consistency and reducing support load for 100+ high-stakes users.

Alibaba Group

Jul. 2024 – Sep. 2024

Product & Software Intern (AI Prototyping)

Hangzhou, China

- Built a full-stack interactive AR prototype with **TypeScript, WebGL, and cloud deployment tooling** for a Lazada feature projected to generate \$23–30M in annual revenue.

PROJECTS

AI Ethics Learning Platform (CMAIL) | GitHub Repo

Apr. 2025 – Present

Project Lead, Instructional Enhancement Grant Fellow

- Architected core platform workflows in **React and TypeScript**, managing deployments and triaging UI/API issues for a large-scale rollout to 230+ users.
- Analyzed user activation and drop-off trends via **SQL/Python**, implementing UX optimizations that increased platform completion by about 40%.

Machine Translation and AI Systems | GitHub Repo

Fall 2025

Johns Hopkins University – Machine Translation

- Reduced runtime latency by 27% in a Machine Translation system by implementing optimized **A* decoding** and **beam search** pruning in **Python**, maintaining high translation quality.
- Implemented IBM Model 1 using **NumPy** vectorization, achieving significant speedups over iterative approaches and surfacing data alignment defects through likelihood tracking.

EDUCATION

Johns Hopkins University

Aug. 2023 – May 2027 (Expected)

Bachelor of Science in Computer Science | GPA: 3.8

Baltimore, MD

Minors: Creative Writing, Entrepreneurship and Management

Honors: Hopkins Scholarship (\$75,000), Schlotterbeck Memorial Scholar, Maryland Certificate of Merit

SKILLS & AWARDS

Languages: Python (NumPy, PyTorch), Rust, TypeScript/JavaScript, SQL, C, C++, Java

Databases: PostgreSQL, Redis

Infrastructure: Docker, Kubernetes, AWS (S3, EC2), GCP, CI/CD (Jenkins, Octopus Deploy)

Concepts: Monte Carlo methods, Stochastic optimal control, Vectorization, Parallel computing, REST/gRPC APIs

Awards: 1st Place, Global Trade Securities Summer 2026 Poker Tournament | 2nd Place, Alibaba Global E-commerce Challenge 2024