

Michael Pignatelli

mpig@seas.upenn.edu // (516) 668-3956 // Hewlett, NY
linkedin.com/in/mpignatelli // michaelpignatelli.com // github.com/mpignatelli12

EDUCATION

University of Pennsylvania, *School of Engineering and Applied Science*, Philadelphia, PA *May 2027*
Bachelor of Science in Engineering in Computer Science and Cognitive Science (*Dual Major*)
Minor in Italian Culture | *GPA: 3.5/4.0*
Coursework: AI, TinyML, Data Structures & Algorithms, Computer Systems, Big Data Analytics, Probability (Wharton), Operating Systems (in progress)
Affiliations: Penn Data Science Group (Wharton), ML Research at Penn, Computer Science Society, Penn Aerospace Club
Planning to sub-matriculate in Master of Science in Engineering in Computer Science (August 2027)

EXPERIENCE

Penn Engineering | *Head Teaching Assistant – CIS 1100* *Aug. 2024 – Present*

- Manage team of **40+ TAs** for Penn's largest intro CS course (**~300 students**), coordinating recitations, office hours, and grading.
- Develop and deliver instruction on data structures, recursion, OOP, functional programming, and Pandas.
- Maintain course infrastructure (cis1100.com) with HTML/YAML/CSS, reducing site errors and streamlining exam deployment.
- Collaborate with faculty to update curriculum, author exams, and lead weekly staff meetings.

Ava Labs | *Software Engineering Intern – Platform Team* *June 2025 – August 2025*

- Implemented and productionized 4 gRPC APIs (**+7.5k LoC**) in the AvalancheGo blockchain client, replacing legacy JSON-RPC and enabling strongly-typed communication for all Avalanche node operators. Leveraged gRPC's **~50% lower latency** (vs. REST benchmarks) to improve efficiency for **~1,800 node operators**.
- Authored incremental deployment plan adopted for H2 2025 rollout, ensuring backward compatibility and multi-team adoption (Platform, Data Tooling, Cloudflare Workers).
- Collaborated with multiple teams to align protocol changes with performance and security standards, contributing to long-term network stability.

Scale AI | *Outlier AI Prompt Engineer (Contract)* *May 2024 – Aug. 2024*

- Engineered and validated **500+ prompts** for LLM fine-tuning, improving accuracy on math and programming tasks in Python/Java.
- Reviewed peer prompts and enforced quality standards, ensuring consistency across datasets.

SELECTED PROJECTS

Pedestrian Buddies — Built embedded CV system (TensorFlow Lite, Keras) for real-time crossing guard gesture detection; optimized inference for hardware-constrained systems [GitHub].
Guess Who? — Developed Java Swing multiplayer game with client-server architecture and robust state sync [GitHub].
Scopal! — Designing SwiftUI card game with GameCenter API; implemented scoring and live multiplayer (4 users) [GitHub].
Published in *Journal of Future Economists* (Vol. 2): "Competing in the Global Semiconductor Industry" (2023)

LEADERSHIP & TECHNICAL INVOLVEMENT

Penn High Powered Rocketry | *Active Recovery Engineering Lead/Head Safety Officer* *Sept. 2023 – Present*

- Lead recovery system design for L3 rocket, implementing dual parachute deployment. Simulated flight dynamics (<5% error vs actual), contributing to successful **12,000 ft launch** at Spaceport America Cup (**122 teams**).
- Oversee safety compliance for **30+ members** as Head Safety Officer, ensuring adherence to NAR/TRA regulations.

Penn Engineers without Borders | *Ramp Committee Engineer* *Jan. 2025 – Present*

- Design ADA-compliant ramp in AutoCAD for Grace City Church, ensuring accessibility for **200+ weekly visitors**.

SKILLS

Programming: Python, Java, Go, C, OCaml, SQL, Swift, HTML/CSS
ML / Data Science: TensorFlow, Keras, PyTorch, Pandas, NumPy, NLP, RAG, LLM Fine-Tuning, Prompt Engineering
Tools: GitHub, Docker, Cloudflare, Jupyter, XML/JSON, LaTeX
Languages: English, Italian