Liam Cooke

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EDUCATION

Baruch College, Zicklin School of Business | New York, NY | *MS in Statistics* 12/26
- *Coursework*: Regression Analysis, Simulation Modeling, Data Analysis, Statistical Learning, Experimental Design

Stony Brook University | Stony Brook, NY | *BS in Computer Science* 12/24
- *Honors*: Honors College, CS Honors Program, Dean's List, Presidential Scholarship
- *Leadership*: Alpha Kappa Psi Professional Co-Ed Business Fraternity, President; SBU Finance Society, Vice President

EXPERIENCE

Quantera.ai | Stockholm, Sweden | *Software Engineer* 04/25 – 01/26
- Built Lattice, an AI-driven financial intelligence platform processing 40k+ data points across structured and unstructured sources using React, Node.js, Express.js, and MySQL, leading UI/UX design with modular Shadcn UI components
- Enabled competitor auditing and discovery of new market entrants with Lattice, improving decision-making speed by 189% and increasing company scouting throughput by 241%
- Accelerated M&A diligence, competitor analysis, and market research through architecting an agentic AI layer, integrating LLM APIs and vector databases for automated insight generation and variance reporting

Nucleo Research, Inc. | San Francisco, CA | *Software Engineer* 08/24 – 08/25
- Secured YCombinator acceptance and $500k+ in immediate funding by building a web-based CT scan viewer (Next.js, Node.js, CornerstoneJS, ONNX Runtime), integrating a custom U-Net model (93%+ Dice coefficient) for automated muscle, fat, and soft tissue identification
- Achieved automated segmentation 2,500x faster than manual workflows with 98% agreement against expert annotations by building end-to-end imaging workflows with PyTorch, NiBabel, and SimpleITK for DICOM-to-NIfTI conversion, image resampling/normalization, and batch inference
- Architected a HIPAA-compliant, radiologist-facing inferencing system for PACS-integrated medical images, using custom deep learning models for slice detection, skeletal muscle segmentation, and lesion measurement, supporting early clinical partnerships with Cedars-Sinai, Stanford Medicine, UCI Health, and Weill Cornell Medicine

The Statesman | Stony Brook, NY | *Web Engineer* 03/23 – 05/24
- Led the management, redesign, and development of Stony Brook University's online newspaper using WordPress, serving over 17,000 students and faculty members; maintained content and special issues on platforms like Issuu
- Oversaw ad content scheduling, plugin updates, and core functionalities to ensure reliable site performance

Henry Schein | Melville, NY | *Backend Developer Intern* 05/23 – 08/23
- Designed and implemented an API for dental SKU ordering in Java for the Global E-Commerce Platform (GEP) initiative using MuleSoft Anypoint Platform, enhancing order processing capabilities
- Collaborated in daily scrum meetings with 15+ team members and built complex Mule Flows, Error Handling strategies, and Message Queues to improve workflow efficiency and system reliability

PROJECTS

AI-Driven Financial Signal Extraction Platform
- Engineered an AI-powered RAG framework using Next.js (Shadcn UI), FastAPI, and a Timescale Postgres vector database to extract insights from SEC filing data via the EDGAR API
- Boosted retrieval accuracy by over 10% by integrating Voyage AI financial embeddings and DiskANN vector search across 1M+ rows, while optimizing data ingestion with edgartools and parallelism to efficiently handle ~90k SEC filings

Socioeconomic Risk Modeling from NYC Housing Complaint Data
- Integrated tract-level dataset from 800k+ NYC housing complaints and ACS data, aligned via spatial joins and geocoding
- Trained Random Forest to predict log income with R^2 of 0.55, outperforming Elastic Net and OLS models by 15-20%
- Identified top complaint-based features via permutation testing; key predictors reduced model performance up to 6%

SKILLS

Languages: Python, Java, R, C, SQL, JavaScript, PHP
Technologies: AWS, GCP, Flask, FastAPI, Pinecone, Langchain, MongoDB, Postgres, Express, React, Node.js, Next.js, Git