JACK GOETTLE

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EDUCATION

University of Pennsylvania School of Engineering and Applied Science *Philadelphia, PA*
Master of Science in Engineering – Computer Information Science *Graduating May 2022*
- GPA: 4.0/4.0
- Coursework (* indicates A+ letter grade): Applied Machine Learning*, Internet & Web Systems*, Database and Information Systems, Product Design*, Programming for the Web*, Theory of Computation, Advanced Analysis of Algorithms

Bachelor of Science in Engineering - Computer Information Science *Magna Cum Laude, May 2021*
- GPA: 3.61/4.0 | Minors: Data Science, Engineering Entrepreneurship
- Coursework: Data Structures & Algorithms, Cloud Computing, Advanced Probability, Software Design, Linear Algebra
- Involvement: Vice President of the Wharton Undergraduate Finance and Technology Group, Treasurer for Beta Theta Pi

PROFESSIONAL EXPERIENCE

University of Pennsylvania *Philadelphia, PA*
Head Teaching Assistant: Database and Information Systems (CIS 550) *Sep 2021 – Present*
- Responsible for managing a graduate-level class of ~150 students and 19 TAs. Responsibilities include organizing & creating course content, teaching weekly recitations, holding office hours, and developing homework problems and solutions.
- Topics taught: advanced SQL, DBMS, relational design theory, MongoDB, AWS, query optimization, NodeJS, React, Neo4j.

Teaching Assistant: Engineering Entrepreneurship (EAS 545) *January 2021 – Present*
- Responsible for grading weekly quizzes & essays on Harvard case studies for a class of 40 students.
- Topics taught: fundamentals of high-tech ventures, raising capital, evaluating VC term sheets, marketing, IP.

Square *Atlanta, GA (remote)*
Software Engineer Intern *Summer 2021*
- Worked on the Inventory team to design and build API endpoints for retrieving and updating inventory transfers in Go.
- Developed a comprehensive engineering design for an Inventory Vendor API that will allow Square sellers to manage their vendors and supply chain via Square's Connect API.
- Won Square's Intern Hack Week. Worked on a team of 4 to build Square Vendor Marketplace - a web application that will allow Square sellers to find and vet vendors for their products and services. Demoed application to CEO and core team.

Square *San Francisco, CA (remote)*
Software Engineer Intern *Summer 2020*
- Worked on the Identity and Access Management team to design and implement a public-facing webhook in Go to notify 3rd party applications when a merchant has revoked an access token. Integrated with AWS and setup monitoring system.
- Won Square's Intern Hack Week. Worked on a team of 5 to construct a hardware recommendation engine and web application for guiding Square sellers in choosing a point-of-sale device. Demoed application to CEO and core team.
- Wrote a getting-started tutorial for developers using the OAuth API and integrated into Square's Developer website.

Comcast NBCUniversal *Philadelphia, PA*
Strategic Analyst Intern *Summer 2019*
- Tasked with building a Hive User Defined Function for engagement classification using a Poisson distribution. Integrated with Hive to leverage Hadoop MapReduce parallelism, decreasing classification runtime from 2+ hours to a few seconds.
- Built a random forest model to uncover most predictive attributes of a customer's propensity to opt into a confidential initiative. Used synthetic minority over-sampling to balance data and voting-based methodology for dimensionality reduction.

PROJECTS

Google Search Clone (CIS 555 term project) *Sep 2021 – Dec 2021*
- Built a distributed web crawler, indexer, PageRank, and search engine that emulated the original design of Google using SparkJava, Storm, Hadoop, AWS DynamoDB, AWS EMR, and AWS EC2. Received highest grade in the class.
- Collected 1.3M docs, crawling 6k/min. Search engine could process 100K concurrent requests with avg response time of 1.3s.

Beating NBA Daily Fantasy Sports *Jan 2020 – May 2020*
- Built a quantile-loss neural network and linear optimizer that beat the NBA DFS 50/50 challenge with a 63.4%-win rate.
- Wrote 8 selenium web crawlers for data collection, cleaned & engineered data, endured multiple hyperparameter tuning iterations across various ML techniques to find optimal performance, and deployed model to Google Cloud.

SKILLS & INTERESTS

Programming languages & technologies

Java	■■■■■	Go	■■■■□	AWS	■■■■□
SQL	■■■■■	HTML/CSS	■■■■□	iOS / Swift	■■■□□
Python	■■■■□	Javascript	■■■■□	MongoDB	■■■□□

Interests: Hiking national parks, fitness, NFL (go birds!), cooking, chess, cryptocurrency, golf