Jake Catron

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Education

University of Maryland ■ **B.S. Computer Science & Mathematics** ▪ **May 2022 Expected Graduation**

- **GPA: 3.53/4.0**

Relevant Coursework: Object-Oriented Programming I & II, Algorithms, Data Structures, Programming Language Paradigms, Calculus I & II & III, Advanced Calculus, Probability Theory, Linear Algebra, Advanced Applications of Linear Algebra, Differential Equations, Applied Probability & Statistics, Intro to Computer Systems, Data Science

Technical Skills

Programming Languages: Java, Python, JavaScript
Frameworks/Libraries: React, Next.js, Node.js, Express, Pandas, TensorFlow, Sci-kit Learn, Apache Spark
Tools/Technologies: AWS, Jenkins, Terraform, Docker, Mongodb, SQL, JUnit**,** GitHub, HTML, CSS, Databricks

Professional Experience

Travelers ■ **Remote** ▪ **June 2021 — Present**
Software Engineer Intern

- Creating a Databricks Job Orchestration & Monitoring System using PySpark & Terraform to coordinate AWS EC2, CloudWatch, Step Function, Lambda Function, S3, DynamoDB, and SNS services. This will automate many ETL processes, reducing working time from ~5 days to ~4 hours.
- Using Apache Spark distributed systems and PySpark SQL queries to process and validate policy data (~10 million rows) stored in S3 Data Lake.
- Developing a CI/CD pipeline to deploy application code of developers into a customer-facing environment using Jenkins, GitHub, and Terraform.

Kratos Space & Missile Defense Systems ■ **Hanover, Maryland** ▪ **Mar 2019 — Sept 2019**
Engineering Intern

- Wrote signal-processing scripts using Python's pandas, numPy, and matplotlib libraries extensively. These scripts extracted multiple csv files (~60k rows) of flight data from ARAV-B launch vehicle and transformed them into a single DataFrame to present to Flight Engineers for further analysis.
- Created a formula reverse engineering the full-time equivalence (FTE) of subcontractors. Deduced my company was overpaying for labor. Created rich visualizations to present to leadership. Program Director cut labor costs by $23 million USD in newest proposal because of my analysis.

Extracurriculars

WMUC Radio Station ▪ **November 2020 — February 2021**
Full Stack Web-Developer

- Collaborated with a team of UMD students to prototype a website for the school's radio station using modern technologies such as React, Ghost CMS, Express, and Node.js

Goldman Sachs ▪ **September 2020**
Engineering Virtual Program

- Gained valuable exposure to modern hashing algorithms and password-storing best practices.

JP Morgan & Chase Co. ▪ **September 2020**
Software Engineering Virtual Experience

- Developed a Python API to feed stock prices to a React front end, creating a real-time line chart visualization.

Projects

Personal Website ▪ *jcatron.com*

- Developed a Next.js statically generated website deployed with Vercel. Achieved Google Lighthouse score of 100 for all categories.

Deep Learning - Bitcoin Price Prediction ▪ *jcatron3.github.io/bitcoin_lstm/*

- Harnessed the power of TensorFlow's LSTM model to forecast the price of Bitcoin 5 minutes into the future.

Leadership Experience

Hero Boys Run Club ■ **Stevensville, Maryland** ▪ **Mar 2017 — May 2019**
Head Coach

- Organized an after-school program for twenty 3rd-5th grade boys. Provided leadership and motivation to kids with no running experience, enabling them to complete a 5km race within 2 months.
- Brought in local pillars of the community (Sheriff, Fire Chief, Veterans, Business Owners) to teach the boys the importance of strong moral values.