Adithya Solai

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EDUCATION

University of Maryland – College Park, MD	**Expected Grad: Spring 2022**
Bachelor of Science, Computer Science (Minor: Business Analytics)	**Cumulative GPA: 3.938 / 4.0**

TECHNICAL SKILLS

Languages: Python, Java, SQL, R, HTML/CSS, C++
Technologies/Frameworks: Pandas, NumPy, scikit-learn, Databricks (PySpark, SparkSQL), Tableau, Matplotlib

WORK EXPERIENCE

Amazon | *Software Development Engineer Intern* – Seattle, WA — **Jun. 2021 – Aug. 2021**

Ocient | *Software Engineer Intern* – Chicago, IL — **Jan. 2021 – Apr. 2021**

Univ. of Maryland | *Teaching Assistant (BUDT 758B: Big Data & AI for Business)* — **Aug. 2020 – Dec. 2020**
- Held weekly office hours and answered 75+ email questions to assist 30+ students with 5 PyTorch assignments.

605 (Data Analytics Firm for TV Ads) | *Junior Data Analyst* – New York, NY — **May 2020 – Aug. 2020**
- Utilized Databricks' PySpark/SparkSQL to optimize SQL queries operating on a daily data pipeline of 5+ vendors and billions of records to reduce Spark cluster costs and save future development time.
- Built Tableau dashboards to deliver daily reports with 50+ metrics that visualize the flow and accuracy of data.
- Conducted ad-hoc analysis on data methodology questions to improve the accuracy of 605's Platf0rm app.

605 (Data Analytics Firm for TV Ads) | *Data Solutions Intern* – Syosset, NY — **Jun. 2019 – Aug. 2019**
- Regression Analysis Engine: Developed a script that accurately compares 605's live algorithms with those in development by randomizing and parameterizing 20+ possible user fields to generate 10+ million input combinations.
  - Queried relational databases using SQL to dynamically define 20+ field ranges and make the analysis more robust.
  - Generated formatted report sheets to clearly visualize algorithm inefficiencies for 45+ non-technical users.

PERSONAL PROJECTS

Monte Carlo Blackjack – Python (Pandas/NumPy/OpenAI Gym/Matplotlib)
- Designed a policy-based, stochastic Reinforcement Learning (RL) algorithm that uses the First-Visit Monte Carlo Method and a custom Blackjack environment built in OpenAI Gym to maximize Blackjack returns.
- Reduced casino edge from 20% to 4% by training an AI agent with my RL algorithm through 1 million epochs.
- Improved my RL algorithm by optimizing γ (discount rate), α (learn rate), and ϵ (explore vs exploit) for max returns.

NBA Three Point Revolution – Python (Pandas/scikit/seaborn/BeautifulSoup)
- Conducted Linear Regression to analyze significance of 3-pt efficiency in predicting team win % across 4 eras.
- Scraped 3000+ player season average records and team standings data dynamically using BeautifulSoup.
- Built violin plots with seaborn to visualize trends and outliers for 3-pt attempts and 3-pt efficiency across 20 years of data.

Song Lyrics Analysis Script – Java
- Analyzed 8 lyricism metrics in thousands of lyrics to investigate the lyrical creativity of 3 hip-hop artists.

Linear Algebra Engine – Java
- Implemented Matrix and Vector objects with functions like inverse, determinant, and row-reduced echelon form.

LEADERSHIP/EXTRACURRICULAR

Apex Student Fund | *Quantitative Equity Research Analyst* – Univ. of MD — **Jun. 2020 – Present**
- Building Portfolio Management analysis dashboards and conducting fundamental research on equities in 2 sectors (Software & Retail) for a student-led investment fund with $8k+ in capital and coverage of 12+ sectors.

International Economics and Finance Society (IEFS) | *VP of Content* – Univ. of MD — **Dec. 2019 – Dec. 2020**
- Led a committee of 4 researchers in developing and presenting professional slide decks and case studies to 70+ club members on topics such as value investing, cryptocurrencies/blockchain, investment banking, and SaaS business models.
- Organized and taught educational, data science-oriented workshops to help members break into quantitative finance roles and attract new members from technical backgrounds to diversify the #1 rated club at the Smith School of Business.
- Spearheaded IEFS Digest as Chief Editor & Writer to publish articles on topics like market technical analysis, oil futures, recession indicators, etc. (medium.com/umd-iefs-online-content) (13 articles published.)

Medium (Towards Data Science) | *Writer* – Remote — **Jul. 2020 – Present**
- Publishing educational data science articles in the premier publication for data science discourse (440k+ followers).
- Wrote a blog series (900+ reads) on Reinforcement Learning for AI newcomers. (adithyasolai.medium.com)

AWARDS/HONORS: ACT: 35, Bloomberg Market Concepts Certification, Univ. of Maryland CMNS Dean's List x 4