Daniel Öman

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Education

Georgia Institute of Technology ***August 2021 – May 2025 (expected)***
B.S. Computer Science, concentrations in Intelligence (AI/ML) and Theory | 4.0/4.0 GPA
Relevant Coursework: Data Structures & Algorithms, Computer Organization & Programming, Probability & Statistics, Combinatorics

Work Experience

Google Sunnyvale, CA
STEP Intern ***May – August 2023***

- Built and tested an efficient parallel-processing data pipeline using FlumeJava, a Java MapReduce framework, to extract and aggregate over 70 web domain level features from a database containing the HTML of more than 500 billion web pages.
- Designed and implemented a novel scalable and extensible data aggregation architecture by applying OOP design patterns and advanced Java principles which reduced feature implementation time by over 50% and eliminated boilerplate code.
- Refactored pipeline to improve reliability by developing a system to flush intermediate output to disk across 100k+ threads during a full table scan, saving up to 7 days of progress during each pipeline execution.
- Extracted features are used in production to train Google Workspace's Growth & Revenue Optimization team's machine learning models, utilized for predicting account upgrade, downgrade, and cancellation behaviors.

Georgia Tech College of Computing Atlanta, GA
Undergraduate Teaching Assistant (Homework Lead) ***August 2022 – Present***

- Manage a team of 40 TAs in the development and grading of 12 homework assignments per semester for ~700 students as TA Homework Lead for CS 1331: Intro to Object-Oriented Programming, under Prof. Richard Landry and Dr. Aibek Musaev.
- Lead weekly recitations for 50 students and help students with problem-solving and debugging during one-on-one office hours.
- Grade 4 exams per semester and write auto-grader unit tests for assignments using the Java Reflections library.

Ermi Atlanta, GA
Engineering Intern ***July – August 2021***

- Analyzed data and created decision trees from health insurance claims data from over 1000 knee surgery patients using R.
- Identified the highest cost patients to target for non-surgical intervention.

Engineering Intern ***July – August 2019***

- Analyzed 10k+ data points from a robot that diagnoses knee injuries, with analysis to be incorporated into research papers.
- Learned and used R to organize and visualize datasets in over 40 plots to assess the reliability and accuracy of the robot.

Georgia Tech Research Institute Atlanta, GA
Research Intern ***June – July 2020***

- Worked in a team of 4 to develop an app that creates a Bluetooth mesh network for emergency communication.
- Implemented routing algorithms in Python and Java and ran simulations of the app to investigate network properties and stability.

Leadership and Involvement

Georgia Tech Financial Services and Innovation Lab Atlanta, GA
Undergraduate Researcher ***January – May 2023***

- Led a team of 4 researchers in performing sentiment analysis on earnings calls transcripts on 12 electric vehicle companies using the natural language processing model FinBERT and library NLTK.
- Developed a custom web scraper using Beautiful Soup to extract over 70 earnings call transcripts from The Motley Fool.
- Created dynamic visualizations from analyzed text data to conclude that 5 major US government policies drove spikes in positive sentiment in earning calls from companies that focus on electric vehicle production.

Technical Projects

Minesweeper Probabilistic Strategy | *Java, JavaFX, Python, Pandas, Jupyter Notebook* ***December 2022 – July 2023***

- Developed a probabilistic algorithm in Java to solve Minesweeper games with 96%, 80%, and 30% win rates for easy, medium, and hard difficulties, significantly higher than the approximate 46%, 22%, and 13% respective human win rates.
- Built row reduction and tree-traversal algorithms to reduce game state matrix dimensionality, lowering solution time by over 30%.

Ruter-Sju Card Game Bot and Monte Carlo Simulation | *Python, Pandas, NumPy, PyPlot* ***December 2021 – March 2022***

- Designed and implemented algorithms in Python to play card game Ruter-Sju to investigate best game strategy.
- Built a Monte Carlo simulation with 20k+ games and used Pandas and PyPlot libraries to analyze and visualize game data.

Skills

Technologies: Java (Including JavaFX, Android Studio), Python (Including Pandas, NumPy, Beautiful Soup), C, Git, LaTeX, SQL, R
Languages: Fluent in Spanish, Swedish, English
Affiliations: Delta Chi Fraternity (Scholarship Chair), Society of Hispanic Professional Engineers, Consult Your Community