# 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 scalable and extensible data aggregation architecture by applying advanced OOP design patterns that reduced feature implementation time by over 50% and provided an intuitive interface for future feature store contributions.
- Refactored pipeline to improve reliability by developing a system to flush intermediate output to disk across 100k+ threads during a full table scan, preventing data loss and saving more than 7 days of progress during each pipeline execution.
- Implemented feature store increased customer coverage by 20% over the existing feature store and is used in production to train machine learning models utilized for predicting Google Workspace account upgrade, downgrade, and churn 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 large language model FinBERT and natural language processing 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