

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, Linear Algebra & Vector Spaces, Machine Learning*, Design & Analysis of Algorithms* (* = current)

Experience

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 over 800 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.

GOOGLE

Sunnyvale, CA

Software Engineering (STEP) Intern

May – August 2023

- Implemented and tested an efficient parallel-processing data pipeline being used in production to train machine learning models that predict Google Workspace account upgrade, downgrade, and churn behaviors.
- Built pipeline using FlumeJava, a Java MapReduce framework, to extract and aggregate 70+ web domain level ML features from a database containing the HTML of more than 500 billion web pages, increasing customer coverage in the feature store by 20%.
- 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 by storing more than 7 days of data progress during each pipeline execution.

GEORGIA TECH FINANCIAL SERVICES AND INNOVATION LAB

Atlanta, GA

Undergraduate Researcher (Subteam Lead)

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 BeautifulSoup 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 earnings calls from companies that focus on electric vehicle production.

ERMI

Atlanta, GA

Engineering Intern

July – August 2019, July – August 2021

- Analyzed data and created decision trees from health insurance claims data from over 1000 knee surgery patients using R, identifying the highest cost patients to target for non-surgical intervention.
- Wrote R scripts to analyze 10k+ data points from a robot that diagnoses knee injuries to assess and visualize its reliability and accuracy, with analysis to be incorporated into research papers.

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.

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, BeautifulSoup), C, SQL, Git, LaTeX, R

Concepts: Big Data, Machine Learning, Algorithms, Statistics

Languages: Fluent in Spanish, Swedish, English

Affiliations: Delta Chi Fraternity (Scholarship Chairman), Society of Hispanic Professional Engineers, Consult Your Community