Zack Gottesman
zackgottesman.me
Charlottesville, VA / Seattle, WA

zackgottesman@gmail.com
qdw5jf@virginia.edu
(206) 962-0587

About Me

I am a computer scientist and first-year Ph.D. student in University of Virginia's School of Data Science, advised by Tom Hartvigsen. Previously, I was a master's student in computer science at Dartmouth College, advised by Soroush Vosoughi and Peter Chin. I like to work on socially impactful applied research in computer science, data science, and quantitative social science that helps improve people's lives. Similarly, I am passionate about making machine learning more interpretable and making interactive tools to improve our ability to interface with complicated models. Some specific domains I have studied in my research are language model interpretability, healthcare, and safety/injury prevention in sports.

Education

University of Virginia, Ph.D. — Charlottesville, VA
GPA: 4.00/4.00 — *August 2024 – Present*

Dartmouth College, M.S. in Computer Science (thesis track) — Hanover, NH
GPA: 4.00/4.00 — *August 2022 – Present*

- Thesis Topic: "Reducing Ambiguity in Text with Better Multimodal Embeddings"

Dartmouth College, B.A. (with honors) — Hanover, NH
GPA: 3.96/4.00; Summa Cum Laude, Phi Beta Kappa — August *2018 – June 2022*

- Double major in Computer Science and Quantitative Social Science (statistics) with focus on history
- QSS thesis: "To Fair Catch, or not to Fair Catch" (analysis of fair catches in Ivy League football)
- Computer Science Honors thesis: "Data Augmentation to Improve Large Point Cloud Scene Understanding"
- Research Lead, Dartmouth Sports Analytics; Engineer, DALI Lab; President, Dartmouth Club Golf

Research

Papers

Math Neurosurgery: Isolating Language Models' Math Reasoning Abilities Using Only Forward Passes (under review at NAACL '25)
Bryan R. Christ, **Zack Gottesman**, Jonathan Kropko Thomas Hartvigsen

Addressing Semantic Ambiguity in Text with Multimodal Inputs (forthcoming)
Zachary Gottesman et al.
Dartmouth Master's Thesis in Computer Science

Data Augmentation to Improve Large Point Cloud Scene Understanding
Zachary Gottesman
Dartmouth Senior Honors Thesis in Computer Science

To Fair Catch, or not to Fair Catch?
Zachary Gottesman
Dartmouth Senior Thesis in Quantitative Social Science

The Value of Health Awareness Days, Weeks and Months: A Systematic Review
Erin Vernon, **Zachary Gottesman**, Raechel Warren.
Social Science and Medicine (SSM), 2021

Presentations/Conferences

MIT Sloan Sports Analytics Conference (2023, 2024)
Selected from among attendees to participate in analytics research hackathon competition at conference both years

Western Economic Association 94th annual conference in San Francisco (2019)
Presented**: "**The value of health awareness days, weeks and months: A systematic review"

Work Experience

SDE Intern — Seattle, WA
Amazon — *June 2022 – September 2022*

- Intern in Alexa AI organization
- Designed and implemented new allocations system for software used by all scientists across Amazon and AWS
- Received return offer for full-time job (chose to pursue graduate school instead)

Data Scientist — Hanover, NH
Dartmouth Football — *November 2019 – September 2022*

- Assisted head coach in analyzing statistics to reduce injuries. Analysis led to rule change proposal in Ivy League

Data Science Consultant — Hanover, NH
Dartmouth Golf — *September 2021 – June 2022*

- Helped players improve performance using custom statistical models for strokes gained and other statistics
- Created proprietary database of college golf data

Founder and CTO — Seattle, WA
SongChain — *March 2020 – August 2022*

- Co-founded and built platform to help fans invest in musicians
- Winner of eBay Best Marketplace Award at UW Dempsey Startup Competition

Full-Stack Software Engineering Intern — Hanover, NH
U.S. Army Corps of Engineers — *April 2021 – April 2022*

- Developed algorithm to process and visualize point cloud data, exposed as a REST API for internal Army tool

Software Engineering Intern — Bellevue, WA
Smartsheet — *June 2021 – September 2021*

- Developed new sharing experience to offer sharing recommendations to over 1,000,000 users
- Worked across full stack, including development of machine learning recommendation system

Startup Founder — Hanover, NH
CoRisk (formerly GreenTrace) — *May 2020 – May 2021*

- Founded contact-tracing startup to help Dartmouth College students remain safe on campus during the COVID-19 pandemic and partnered with Dartmouth's DALI Lab to bring app to market

Machine Learning Engineering Intern — Bellevue, WA
Likewise — *June 2019 – August 2019*

- Worked for early-stage startup, funded by Bill Gates, that provides personalized media recommendations
- Built end-to-end classification system to predict user retention based on limited features

Teaching

COSC 052 (Full-Stack Web Development) — Dartmouth College
Professor Tim Tregubov — *Spring 2022, 2023, 2024*

- Head TA for 2023 edition; supervised other undergraduate and graduate TAs in teaching and grading responsibilities and hosted 5+ office hours per week to assist students
- In charge of teaching original unit on machine learning engineering and deployment for 2024 course

COSC 061 (Database Systems) — Dartmouth College
Professor Adam Goldstein — *Summer 2023*

- Hosted weekly office hours and graded conceptual and practical databases assignments

Dartmouth Coursera Web Development MOOC — Dartmouth College
Professor Tim Tregubov — *January 2022 – June 2022*

- Developer of course material and automated grading test suites for Dartmouth online course
- Created original assignments related to database and api design, including written instructions and code

Tuck FWP (Fundamentals of Web Programming) — Dartmouth College
Professor Devin Balkcom — *Fall 2021*

- Taught introductory programming to Tuck Business School students

COSC 001 (Introduction to Programming and Computation) Dartmouth College
Professor Devin Balkcom *Spring 2020*

- Planned and ran weekly recitation sessions with original lesson plans for students during transition to remote learning
- Graded and provided feedback on assignments and exams

Awards/Honors

- Awarded full-ride merit-based scholarship for Dartmouth computer science M.S. program
- Prize winner, HackDartmouth Hackathon 2023 (second of ~100 teams from various universities)
- Graduated Summa Cum Laude with honors
- Inducted to Phi Beta Kappa
- Eight citations for meritorious performance in Dartmouth courses (top 2% of total grades)