Ben **Zuckier**

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Education

Yeshiva College Honors

GPA 3.9/4.0

B.S. in Computer Science and Mathematics — *September 2018 - May 2022 (Expected)*

- Dual curriculum consisting of an additional 16 credit-hours each semester of Judaic Studies.

Courses: Algs I, II; Calc III; Phys I, II; Math Stat; Network Science I, II; Logic; Comp Org; OS; PL; ML; Parallel; DS Applied; AI; NLP; DS Capstone;

Languages: C; Java; JavaScript; Python; R; LaTeX; Wolfram Language; **DBs:** SQL (Postgres, MySQL); Mongo; Redis; Spark; Neo;

Projects

Machine Learning Projects (GitHub)

Spring 2021 - Fall 2021

- Made an NLP model to predict if an actual disaster is occurring or not by classifying Tweets with sentiment analysis and displayed it using VueJS.
- Predict when an employee might leave their job and productionize the training and model in the cloud for a "recruiter" to predict new candidates.
- Made AI agents in Python to play Connect4 using heuristics, MiniMax with AlphaBeta, Monte Carlo and Monte Carlo Tree Search – they almost always beat an advanced player.
- Explore and detect credit card fraud on real world data with over 300 features using SoTA techniques and outlier detection.
- Submission for the Netflix Prize Recommender to recommend movie content to a hypothetical user using collaborative filtering and a DNN.
- Used Convolutional Neural Networks to identify skin lesions and detect cancerous melanoma from images in the MNIST: HAM10000 data.
- WIP: explore YouTube trending videos from the past year and use features such as likes, number of comments, title, tags, description, and engineered features like an embedding of thumbnails, and NLP encodings, predict if a video will trend, possibly including a GAN recommender.

Network Science

Spring 2021, Fall 2022

- Analyzed the massive Bitcoin and Ethereum blockchain networks with several hundred million total edges, showing they're best modeled by a power law distribution with clear preferential attachment and early mover advantages – the "Rich Get Richer" effect.
- Simulated and analyzed the NY subway as a network where "lines" are vertices and transfers from line to line are edges, showing its resilience.

Physics Capstone Project

November 2020

- Measured gravity using a massive pendulum whose period was measured with a laser, accurate to 1% and precise to .04% of actual "g".

URL Shortener Website

November 2020

- Backend Node.js & Express with MongoDB, Bootswatch frontend, deployed on GCloud App Engine.

Experience

Teacher's Assistant - Machine Learning, Design and Analysis of Algorithms, Intro to CS

NYC

Yeshiva University — *Fall 2019, Spring 2021, Spring 2022*

- ML: graded and provided feedback on their weekly assignments. Held office hours to review lecture material and assist with homework.
- D&A Algs: Assist students in TA meetings with their understanding of algorithms and help them in their analysis and design processes.
- Intro: Review lecture material and student assignment submissions in TA meetings to help improve students' understanding, style, and efficiency.

Founder and Director of Tech Consulting @ Yeshiva TAMID

January 2021 - Present | *Yeshiva*

- Teach 8 to 10 members basics of modern web dev in **JS** and **Python** with DBs like **Mongo** on the cloud – including lifecycle, collaboration, and general technologies – and lead and direct them to consult and work on semester long projects for client companies.

NY Emergency Medical Technician

October 2020 - Present | *SeniorCareEMS*

- Work part time as an EMT, including operating the ambulance, emergency response, transporting patients, and interfacing with healthcare staff.

Tech+Media, EMT

Summers 2018 - 2021 | *Camp Morasha*

- EMT on call 24/7 for 1500 people in 2021.
- Design and run the camp's numerous livestreams, with four camera streams and 2k concurrent viewers. Head photographer, manage the other photographers.

Tutor - Math and Sciences

September 2018 - June 2020 | *NYC*

- College peer tutor for Mathematics and Computer Science, reviewing and helping university students with their courses.
- Review content with students in 9th - 12th grade including algebra, geometry, calculus, biology, chemistry, and physics.

About

I am a CS and Math student who loves learning new things, especially as a believer in "hacking the learning curve". I enjoy problem solving, particularly when it requires intensive research down a rabbit hole or creative thinking.

Leadership: Director of Tech Track for TAMID@YU; College TA x2; Chair of Model UN Committee for HS students;

Hobbies: Hiking and Camping; Photography; Chess; Skiing; Swimming; Guitar;

Certifications: NY EMT-B; Red Cross Lifeguard;