
EDUCATION

Dartmouth College*Sept 2018 - June 2022*

- GPA: 3.78/4.00
- Pursuing a B.A. in Computer Science and a B.A in Mathematics
- Thayer Scholar (top 5% of incoming engineering students), Ellwood H. Fisher Grant recipient, and Research Scholar
- Relevant Coursework: Problem Solving via Object-Oriented Programming, Software Design and Implementation, Linear Algebra, Calculus of Multi-variable and Vector-valued Functions

Biotechnology High School*Sept 2014 - June 2018*

- International Baccalaureate Diploma Recipient
- GPA: 4.00/4.00 (96.85/100)
- SAT: 1560/1600 SAT I, 800/800 Mathematics II, 800/800 Physics, 800/800 Biology-M

WORK EXPERIENCE

Rebellion Research

New York, NY

Quantitative Analyst Intern

June 2019 - Aug 2019

- Constructed long-term equity investing and portfolio rebalancing algorithms in Python using quantitative techniques.
- Implemented a proprietary backtester and market simulator to assess model performance.
- Filtered, parsed, and labeled big data for use in financial modeling.
- Conducted high-profile interviews and published reports on the impact of emerging technologies on company website.

Dartmouth Visual Computing Lab

Hanover, NH

Researcher

Jan 2019 - present

- Work directly under Prof. Bo Zhu, conducting research on hyper-realistic simulations of physical systems.
- Designed and implemented a 3D soft-bodied drone simulator in C++ using the finite element method (FEM) and neohookean elasticity; anticipating publication.

The Guardian Life Insurance Company, International Planning Alliance LLC

Shrewsbury, NJ

Data Science Intern

June 2017 - Aug 2017

- Used Python algorithms to organize 33,000 company records and identify inactive insurance brokers.
- Contacted 1,000 inactive insurance brokers and revitalized 300 business relationships.

PERSONAL PROJECTS

- **Robin (ongoing)**: Programming a natural language processing text identification tool for suicidal sentiment using 1.1m scraped social media posts and machine learning techniques such as LSTM RNNs, GRU RNNs, HANs, and SVMs.
- **Good One Dad (ongoing)**: Designing a text-generation tool for short jokes using 1m+ scraped internet jokes and a Transformer with Attention machine learning approach.
- **D2BioSoftware**: Developed image-processing algorithms that count the number of colonies on a bacterial plate, using techniques such as adaptive thresholding, bilateral filtering, edge detection, and blob detection. Used by the University of Pittsburgh's McGowan Institute for Regenerative Medicine Industry Development Team. Implemented as an Electron JavaScript Application.
- **EffortlessAI**: Programmed an open source GUI-based multilayer perceptron framework in IPython notebooks. Allows users to save/load neural networks via JSON, easily initialize their own neural networks, view visual representations of synapse weights via matplotlib, and query/view previous training epochs. <https://github.com/dandip/EffortlessAI>
- **CliFi**: Created an ESP8266 microcontroller system that collects climate data from various sensors, parses the data, uses it to toggle appliances via relays, and then submits it to an external web server in JSON format. <http://dipietrodaniel131.000webhostapp.com/>
- **TheOmniscientInvestor**: Programmed a financial analytics web app that offers stock data and price indicators for all publicly traded companies via the AlphaVantage API.
- **Web Traffic Bot**: Developed a python bot that can deliver up to 865,000 unique website views per day via proxy switching; successfully used to boost my websites in Google search results.
- **Carnivorous Journey**: Created a plant resource website containing blog posts, galleries, and grow guides. Programmed proprietary scripts for galleries, lightboxes, and blog post formatting. www.CarnivorousJourney.com

PUBLICATIONS, SPEAKING ENGAGEMENTS, & DISTINCTIONS

- **Alpha Cloning: Using Quantitative Techniques and SEC 13f Data for Equity Portfolio Optimization and Generation**: Investigates the use of SEC filing data for generating and optimizing stock portfolios algorithmically. First author scholarly publication in the Journal of Financial Data Science, Volume 1, Issue 4, Doi: <https://doi.org/10.3905/jfds.2019.1.008>
- **Princeton University**: Invited to speak by the Princeton Botany Club and Mid-Atlantic Carnivorous Plant Society. Delivered a talk on species of carnivorous plants native to the tepuis of South America, focusing on the *Utricularia* Orchidioides complex.
- **National Society for Microbiology**: Received the National Society for Microbiology's honorable mention at the Delaware Valley Science Fair for my work on the effects of preservatives on probiotic bacteria.

SKILLS

- **Programming Languages**: Python, Javascript, C++, C, Java, HTML, CSS
- **Technologies**: Artificial Neural Networks/Machine Learning, Data Processing, JSON, jQuery, Web Scraping, UI Design, Microcontrollers, API Interaction, Bash, UNIX, Apache, MySQL, MongoDB, Git, LaTeX, Electron
- **Professional Skills**: Collaboration, Project Management, Public Speaking, Technical Writing