

# ANGELA (ZI LAN) ZHANG

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## EDUCATION

Dartmouth College, Hanover, NH EXPECTED JUNE 2023  
*B.S. Computer Science and Quantitative Social Science* GPA 3.72/4.0  
Relevant Coursework: Full-Stack Development, Software Design and Implementation in C and UNIX, Object Oriented Programming in Java, Machine Learning in Python, Algorithms, Discrete Mathematics, Linear Algebra  
York House High School, Vancouver, BC June 2019  
Honors/Awards: 5x Honors Roll, AP National Scholar GPA 4.0/4.0

## SKILLS & TECHNOLOGIES

Programming Languages: Python, Java, R, JavaScript, HTML5, CSS3, Swift4, C#  
Frameworks & Modules: React.JS, Redux, Node.JS, Flask, Express, Mongoose, JQuery, Bootstrap, NumPy, MongoDB, Unity UI

## WORK EXPERIENCE

Digital Applied Learning and Innovation Lab, Hanover, NH August 2020 - Present  
*Software Engineer*

- Admitted as one of the youngest members to [tech-entrepreneurial program](#) after rigorous selection process
- Creating [products](#) for companies around the world in teams of designers, engineers, PMs
- Currently staffed as a full-stack and data visualization developer for a web-based beetle prediction project

Dartmouth Academics Skill Center, Hanover, NH April 2020 - Present  
*Computer Science and Math Tutor*

- Helped 5 assigned peers to achieve 90%+ in Calculus and Python classes in a 1:1 setting
- Provided feedback to simplify complex concepts, debug, improve efficiency and decrease memory usage
- Established trust by being accessible, patient, and empathetic

## PROJECTS

Twitter-Reddit API | <https://github.com/azhang4216/RedditAPI>

- Created Twitter-Reddit API Project to uplift people during shelter-in-place with memes and laughter
- I discovered that subreddits are difficult to access and navigate, but the effective up-vote system ensures quality content is highly visible regardless of creator's popularity. On the other hand, twitter has easy accessibility but retweets are heavily influenced by user popularity. This project focuses on leveraging Reddit's effective upvote system and twitter's accessibility for optimal content.
- Used the praw API to source top-rated reddit memes by leveraging Reddit's up-vote system, which I then posted to a Twitter platform (tweeted) using the tweepy API

Pine Beetle Infestation Visualization and Prediction Tool | <https://pine-beetle-prediction-dev.netlify.app/> (under construction)

- Making a web-based pine beetle infestation visualization and prediction tool to optimize accessibility and provide visualization of beetle data for entomologists, US Forest Service, and the general public
- The US Forest Service reached out to our DALI team to solve their pine beetle data accessibility and distribution problems due to exponentially increasing data banks and outdated software.
- Improved average prediction generation time from several minutes to seconds by rewriting the backend data pipeline to a MongoDB database using Express.JS middleware and Mongoose schemas
- Enhanced frontend UX / UI by recreating website layout and style with React / Redux and JS libraries

Amazon Product Quality Prediction Tool

- Developing a Python with NumPy machine learning tool that handles large sets of data to predict the quality of a grocery product with high precision and recall (F1 score = 0.82 +/- 0.5)
- Approaches & Classifiers used include: TFIDF, Logistic Regression, Gaussian Naïve Bayes, SVMs, LinearSVC

## PROJECTS (COURSE WORK)

- Dartmouth Map:** calculates closest path to take between any two locations on campus using BFS. Includes a visual map that allows users to see said path
- Sudi:** a personal digital assistant that performs POS (parts of speech) tagging via HMM (Hidden Markov Models)
- City Visualizer:** animated visualizations for city populations, wrapped in GUI
- Huffman Encoding:** compressing and decompressing files using trees, maps, priority queues, file i/o to save bits
- Kevin Bacon Game:** an interactive game based on social network problems made using BFS & Graphs
- Sketching Server:** a collaborative graphical editor that allows multiple clients to edit the same sketch on a server
- Webcam Painting Program:** a webcam-based painting program using a user selected part of the image acts as a paintbrush

## LEADERSHIP & CO-CURRICULAR ACTIVITIES

Dartmouth Agape Student Group, *Outreach & Event Coordination Committee*

- Spearheaded club promotion and outreach to incoming freshmen, resulting in 20+ new freshmen members
- Transformed and adapted membership events to an online format in unprecedented COVID times

Dartmouth Women's Golf, *Division I Student Athlete*

- [Awards](#) include: Program Record Holder, WGCA All-American Scholar, Rookie of the Year, Co-MVP