

JOSHUA PFEFFERKORN

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EDUCATION

Dartmouth College, Hanover, NH **June 2024**
Bachelor of Arts, Major in Computer Science, Minor in Digital Arts **Major GPA 3.95/4.0, Cumulative GPA 3.93/4.0**
Relevant Coursework: Object-Oriented Programming, Software Design, Discrete Mathematics, Artificial Intelligence, Machine Learning and Statistical Data Analysis, Computer Architecture, DALI mini-series in Web Development and Deep Learning

Gonzaga College High School, Washington D.C. **June 2020**
Honors/Awards: Valedictorian, National Merit Finalist, AP Scholar with Distinction, **GPA 4.0/4.0 (4.63 weighted)**
Award for Excellence in Computer Science
ACT Score: 36/36
Activities: National Honor Society (President), InLight Magazine Editor, Retreat Team

LANGUAGES & SKILLS

Programming Languages: Python, Java, C, HTML/CSS, JavaScript
Technical Skills: Proficiency in Git, LaTeX, Tableau, Adobe Illustrator & Photoshop, Figma, React.js

RELEVANT EXPERIENCE

Maxar Technologies, Herndon, VA ***September 2022 - December 2022**
Geospatial Machine Learning Intern

- Working on the launch of SpaceNet 9, an open-source geospatial data science challenge

Minds, Machines, and Society Group, Hanover, NH **June 2022 - August 2022**
Undergraduate Research Assistant

- Wrote programs in Python to efficiently process large corpora into sequence-labeled datasets using Flair and Stanza, two natural language processing libraries; 10 hours a week during an academic term

Dartmouth Computer Science Department, Hanover, NH **January 2022 - June 2022**
Teaching Assistant for Object-Oriented Programming & Machine Learning and Statistical Data Analysis

- Instructed small groups of 8-12 students during weekly programming sessions, held three hours of office hours weekly to assist students with assignments and studying, and graded and provided feedback on assignments and examinations; 12 hours a week during an academic term

PROJECTS

Search Engine **February 2021**

- Created a functional search engine in C using set and map ADTs coded from scratch
- Designed three modules: crawler, which crawls the web to retrieve pages and extract embedded URLs; indexer, which parses files produced by the crawler to track word appearances; and querier, which uses the indexer-produced word data to respond to user search queries

AI Chess Player **October 2021**

- Coded a chess bot in Python using arrays of positional and material scores for board pieces to compute move favorability
- Implemented the minimax algorithm with alpha-beta pruning to recurse through the game tree and select the best move

Hidden Markov Model Part-of-Speech Tagger **November 2020**

- Used data structures and implemented the Viterbi algorithm in Java in order to generate part-of-speech sequences for English sentences with over 95% accuracy

Wordle Solver **March 2022**

- Built a Wordle engine in Python to simulate the online word game
- Used information theory to code a solver that could find the answer to Wordle puzzles in an average of about 3.5 guesses, storing word entropies in a map ADT for rapid lookup of high-information guesses

LEADERSHIP & ACTIVITIES

Dartmouth Machine Learning Group, Hanover, NH **March 2022 - Present**
Vice President

- Held weekly meetings and attended weekly three-hour hackathons; presented on new deep learning research papers
- Developed a model on Kaggle to extract semantic similarity between U.S. patent documents by matching key phrases

Psi Upsilon Fraternity, Hanover, NH **June 2022 - August 2022**
Treasurer

- Oversaw the collection of membership dues, worked with fellow officers to manage a \$34,000 budget, distributed funding appropriately, and ensured the payment of fees, taxes, and utilities