

# JOSHUA PFEFFERKORN

Bethesda, MD · 240-515-7483 · [joshua.d.pfefferkorn.24@dartmouth.edu](mailto:joshua.d.pfefferkorn.24@dartmouth.edu)  
[pfeff.me](https://pfeff.me) · [www.linkedin.com/in/joshua-pfefferkorn/](https://www.linkedin.com/in/joshua-pfefferkorn/)

## 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 - Present**  
*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 **October 2022 - Present**  
*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