

# Varun Madan

[varunmadan.com](http://varunmadan.com) | [vmadan@stanford.edu](mailto:vmadan@stanford.edu) | [linkedin.com/in/varunmadan](https://www.linkedin.com/in/varunmadan) | [github.com/madanva](https://github.com/madanva)

## EDUCATION

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### Stanford University

Sept. 2022 – Jun. 2026

*Bachelor of Science in Computer Science*

*GPA: 3.8*

- **Relevant Courses:** Machine Learning (Python), Data Structures and Algorithms (C++), Computer Organization and Systems (C), Introduction to Probability for Computer Scientists (Python), Design and Analysis of Algorithms, Mathematical Foundations of Computing, Linear Algebra and Multivariable Calculus

## EXPERIENCE

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### Data Science Intern

Jun. 2023 – Sept. 2023

*Altai Capital*

*Newport Beach, CA*

- Conducted research and [data analysis in R](#) on hundreds of recycling centers and their capacity/materials processed in four prominent Western countries (Germany, Canada, United Kingdom, and France) for the firm's CEO.
- Added existing plastic sortation data in Germany for each recycling center to my map that was then used to aid the company's investment in Digimarc's proprietary digital watermark-based sortation technology.

### Research & Development Engineering Intern

Jun. 2022 – Aug. 2022

*SIMETRI*

*Orlando, FL*

- Developed and tested numerous augmented reality simulations with Unity in a modular medical environment to mimic healthcare simulations on the battlefield.
- Led a robust cost-benefit analysis of new scanning technologies by negotiating with manufacturers on behalf of the engineering department, which ultimately helped decrease excess company spending by over \$10,000.

## PROJECTS

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### Emergence in LLMs | *Python, PyTorch, CUDA, TensorFlow*

Jan. 2024 – Present

- Investigated the relationship between harsh and soft metrics of LLMs in dozens of open-source models found on the Hugging Face leaderboard as a researcher in Professor Sanmi Koyejo's Stanford Trustworthy AI group.
- In the process of developing a formal soft metric relationship that can accurately predict a model's emergence patterns for any given number of parameters, thus saving researchers a large amount of time and resources.

### Vintave | *Python, PyTorch, React, SQL*

Jan. 2023 – Sept. 2023

- Built a computer-vision-based authentication and quality assurance software to provide over 150 avid shoppers with high-quality used handbags from 10+ local shops that lack an online presence around the Bay Area.
- Accepted to the Stanford Design School's Launchpad 13 cohort as well as the Stanford Doerr School's Hacking for Climate and Sustainability, two of the most selective accelerator-based classes on campus.

### BeemunityAI | *Python, TensorFlow, R, Keras, Scikit-learn*

Aug. 2017 – Sept. 2022

- Developed a probiotic mixture treatment and a novel multiple linear regression model in collaboration with the University of Florida to optimize honeybee gut immunity against numerous external stressors.
- Awards/Honors: European Union Contest for Young Scientists Award Winner, 2-time Regeneron ISEF 1st Place Winner, Minor Planet Naming, National Science Talent Search Scholar, 5-time Florida Regional Grand Champion.

## LEADERSHIP AND VOLUNTEERING

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- **Founder/Lead of Google Developer Student Clubs @ Stanford:** Developer group of 50 students on campus.
- **Teaching Fellow for CS 105, Introduction to Computers:** Stanford course for Title I High Schools nationally.
- **Founder/CEO of Everyone Deserves STEM:** Nonprofit providing scientific education to 1,500 children globally.

## TECHNICAL SKILLS

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**Languages:** Python, JavaScript, C, C++, SQL, R, Java, HTML, CSS

**Frameworks:** React.js, React Native, Node.js, Express.js, Flask, PyTorch, CUDA, TensorFlow

**Developer Tools:** Git, Google Cloud Platform, VS Code, Visual Studio, IntelliJ, Eclipse, Qt Creator

**Libraries:** NumPy, Matplotlib, Scikit-learn, pandas