Ketan **Agrawal**

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Summary

I'm a master's student in Computer Science at Stanford using artificial intelligence in human-centered applications. My outputs include published research, an impactful web application at Amazon, and a hackathon-winning smart glove. In my free time, I enjoy extending Emacs, experimenting in my digital laboratory, and playing with my cats. I am looking for machine learning engineer, research scientist, or data scientist roles.

Education

Stanford University   *Stanford, CA*

M.S. in Computer Science (AI) *GPA: 3.89/4.00*   *Jan. 2021 - Jun. 2022 (expected)*

- Relevant Coursework: Deep Generative Models, Computer Networking, Reinforcement Learning (*planned*)

Stanford University   *Stanford, CA*

B.S. in Symbolic Systems (AI) *GPA: 3.82/4.00*   *Sep. 2017 - Jun. 2021*

- Relevant Coursework: Computer Vision, Natural Language Processing, Knowledge Graphs, Probabilistic Programming

Research Experience

Stanford HCI Group   *Stanford, CA*

Research Assistant   *Mar. 2021 - present*

- Working on a human-AI co-creation system, whereby users can personalize the output of ML models via interactive feedback loop.
- Incorporating causal inference in models s.t. users can specify *why* an output is unsatisfactory, and the model learns to correct.

Stanford Vision Lab   *Stanford, CA*

Research Assistant   *Jan. 2020 - Aug. 2021*

- Developed + trained multimodal ML models combining audio, video, and text to detect depression/anxiety from patient interviews.
- Used techniques such as data augmentation, balanced sampling, and focal loss to combat small dataset size / class imbalance.

Stanford Language and Cognition Lab   *Stanford, CA*

Research Assistant   *Oct. 2018 - Jun. 2020*

- Applied human face and pose estimation algorithms to examine longitudinal trends in infants' visual scenes.
- Work accepted and was presented at Conference of the Cognitive Science Society 2020.

Work Experience

Fire TV, Amazon   *Gahanna, OH (virtual)*

Software Development Intern   *Jun. 2020 - Sep. 2020*

- Developed a web portal for onboarding 20+ TV partners (e.g. Hulu) using React/Node/Typescript. Deployed on AWS using EC2/S3/DynamoDB.
- Worked closely with team to design an intuitive, robust user interface; set the foundation for a more expansive self-service portal.

Programming Abstractions (TA), Stanford Computer Science   *Stanford, CA*

Section Leader   *Jan. 2019 - present*

- Selective TA position, taught weekly discussion section and office hours for 3+ quarters of CS 106B: Programming Abstractions.
- Worked with sectionees on whiteboard and computers to create elegant, efficient solutions to data structures and recursion problems.

Projects

Interactive Timbre Exploration   *link →*

- Using variational autoencoders (VAEs) to interactively vary the musical timbre (tone) of an note, e.g. from a piano to a cello.
- Neural network written and trained in PyTorch on a GPU-enabled machine. Website built using Typescript / Next.js.

Smart Glove   *link →*

- Raspberry Pi-powered smart glove to control IoT devices. Won hardware prize in Interhackt hackathon.
- Makes use of Spotify, FB Messenger, Philips Hue APIs in Python, soldering / GPIO pins to assemble glove.

Skills

Expert: Python, PyTorch, SciPy stack **Proficient:** TypeScript, React.js, Node.js, C/C++, **Some experience:** Tensorflow, Neo4j, Rust, WebPPL, Lisp, Bash