Tejasvi Kothapalli

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Education

Aug 2023 – Present	**University of California, Berkeley – Vision Science PhD** *Area:* Computational Neuroscience & Computer Vision *Advisor:* Jacob Yates
Aug 2018 – May 2022	**University of California, Berkeley – Electrical Engineering & Computer Science B.S.** *Cumulative GPA:* 3.746 *Upper Division Technical GPA:* 3.916 *Upper Division Coursework:* **Math 110**: Linear Algebra, **EE 120**: Signals and Systems, **EE 126**: Probability and Random Processes, **EE 127**: Optimization Models in Engineering, **CS 100**: Principles & Techniques of Data Science, **CS 161**: Computer Security, **CS 170**: Efficient Algorithms and Intractable Problems, **CS 182**: Designing, Visualizing and Understanding Deep Neural Networks, **CS 188**: Introduction to Artificial Intelligence, **CS 189**: Introduction to Machine Learning, **CS 194-26**: Intro to Computer Vision and Computational Photography, **CS 194-80**: Full Stack Deep Learning, **CS 280**: Computer Vision, **CS 285**: Deep Reinforcement Learning, **CS 288**: Natural Language Processing *Research:* I have had the pleasure of working with Professor **Stella Yu**, Professor **Meng Lin**, Professor Yubei Chen, and Postdoctral Scholar Peter Wang on various machine learning projects. I completed my Senior Honors Thesis: **Studying Dry Eye Syndrome with Machine Learning**.

Experience

Aug 2023 - Present	**Graduate Student Researcher** Researching Natural Vision in Primates and its applications to Computer Vision.
Jun 2020 - May 2023	**Researcher at ICSI (International Computer Science Institute)** *The Effects of Whitening in Neural Networks:* We modified Batch Normalization to decorrelate the feature map. We found whitening to improve ResNet training on CIFAR-100 by over 2 percent. Collaborated with Professor Yu, Yubei Chen, and Peter Wang. *Meibography Artifical Intelligence:* Used computer vision and classical machine learning techniques to predict eye diseases. Collaborated with Professor Yu, Professor Lin, and Peter Wang.
Aug 2021 - May 2023	**Student Research Assistant at CRC (Clinical Research Center)** *EasyTear Lipid Layer Analysis:* Using computer vision techniques on videos of eye to determine lipid layer motion and thickness. Collaborated with Professor Lin, Professor Yu, Peter Wang. *Tear Aqueous Production Rate:* Built clinical tool to help compute tear aqueous production rate. Collaborated with Professor Lin.
Aug 2022 - Dec 2022	**Machine Learning Engineer at Aizip** Startup in the tinyML space where ML models are deployed to IoT devices. Worked on people detection and fall detection.
May 2022 - Present	**Teacher at Inspirit AI** I have taught the Inpsirit AI Scholars curriculum to high students in-person at Khan Lab School, Bellarmine College Preparatory, Evergreen Valley High School, and Bentley School. The curriculum teaches basic machine learning and AI concepts to students.
May 2017 - Aug 2017	**NASA Ames Research Center Intern** Worked in the Tensegrity Robot Division. Contributed to an open source web based tensegrity robot simulator. Used machine learning evolutionary algorithm to locomote twelve-rod tensegrity structures in simulation.

Publications

1 | **A Machine Learning Approach to Predicting Dry Eye-Related Signs, Symptoms and Diagnoses from Meibography Images**
Andrew Graham, **Tejasvi Kothapalli**, Jiayun Wang, Jennifer Ding, Vivien Tse, Penny A. Asbell, Stella X. Yu, Meng Lin
In Proceedings for Artificial Intelligence in Medicine, 2023

2 | **Tracking the Dynamics of the Tear Film Lipid Layer**
Tejasvi Kothapalli, Charlie Shou, Peter Wang, Tatyana Svitova, Andrew Graham, Meng Lin, Stella Yu
Workshop at Neural Information Processing Systems (Neurips): Medical Imaging meets NeurIPS, 2022

3 | **Saving Energy in Homes Using Wi-Fi Device Usage Patterns**
Tejasvi Kothapalli
International Journal of Energy Optimization and Engineering (IJEOE), 2018

4 | **Controlling Tensegrity Robots through Evolution using Friction based Actuation**
Tejasvi Kothapalli, Adrian Agogino
NASA Technical Reports, 2017

Honors

Aug 2023 - Present | **CIVO Fellowship**
Generously funded for graduate studies to conduct research which promotes innovative display, graphics, and optical technology for the healthy and diseased eye.

Aug 2021 - May 2022 | **EECS Honors Program**
A program to recognize EECS students who commit to research, strong academics, and writing a senior thesis.

References

1 | **Jacob Yates**, yates@berkeley.edu
Professor, Herbert Wertheim School of Vision Science and Optometry, UC Berkeley

2 | **Stella Yu**, stellayu@berkeley.edu
Professor, Electrical Engineering and Computer Sciences, University of Michigan, Ann Arbor
Adjunct Professor, Electrical Engineering and Computer Sciences, UC Berkeley
Director, ICSI Vision Group

3 | **Meng Lin**, mlin@berkeley.edu
Professor, Herbert Wertheim School of Vision Science and Optometry, UC Berkeley
Director, Clinical Research Center

4 | **Yubei Chen**, yubeic@fb.com
Professor, Electrical and Computer Engineering, UC Davis

5 | **Peter Wang**, peterwg@berkeley.edu
Postdoctral Scholar, California Institute of Technology