Tejasvi Kothapalli

tejasvi.kothapalli@berkeley.edu 408-802-0896 tejasvikothapalli.github.io

Education

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**, Postdoc Researcher Yubei Chen, and PhD candidate Peter Wang on various machine learning projects. I completed my Senior Honors Thesis: **Studying Dry Eye Syndrome with Machine Learning**.

Experience

June 2020 - Present

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 - Present

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 - Present

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.

Jan 2019 - Aug 2019

Weight Lifting Posture Checker
Created an application to check the form of weightlifting movements and provide feedback to users. Working with fitness industry partners like Starting Strength and Stronglifts 5x5 to deploy to consumers. Worked with numerous computer vision techniques: Data Annotation and Augmentation, Object Tracking, Training Object Detection Models with Turicreate, and Human Pose Detection Models with Tensorflow.

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 **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

2 (Preprint) **A Machine Learning Approach to Prediciting Dry-Eye Related Signs, Symptoms and Diagnoses**
Tejasvi Kothapalli, Peter Wang, Andrew Graham, Meng Lin, Stella Yu
Plan to submit the journal of the American Academy of Ophthalmology (Ophthalmology)

3 (Preprint) **The Effects of Soft Constraint Whitening and Kurtosis Loss in Neural Networks**
Tejasvi Kothapalli, Matt Zhou, Peter Wang, Yubei Chen, Stella Yu
Plan to submit Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)

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

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

Honors

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 **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

2 **Meng Lin**, mlin@berkeley.edu
Professor, Herbert Wertheim School of Optometry, UC Berkeley
Director, Clinical Research Center

3 **Andrew Graham**, agraham@berkeley.edu
Senior Biostatistician, Clinical Research Center

4 **Yubei Chen**, yubeic@fb.com
Research Scientist, Fundamental AI Research, Meta

5 **Peter Wang**, peterwg@berkeley.edu
PhD Candidate, Vision Science at UC Berkeley