

# Tejasvi Kothapalli

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## Education

Aug 2023 – Present	<b>University of California, Berkeley – Vision Science Ph.D.</b> <b>Area:</b> Computational Neuroscience & NeuroAI <b>Advisor:</b> Jacob Yates, <b>Thesis Committee:</b> Bruno Olshausen, Jack Gallant, Alex Huk, Jacob Yates <b>Labs:</b> The Active Vision and Neural Computation Lab (Led by Jacob Yates), The Redwood Center for Theoretical Neuroscience (Led by Bruno Olshausen) <b>Cumulative GPA:</b> 3.979 <b>Course Work:</b> <b>VS 260A:</b> Optical and Neural Limits to Vision (A), <b>VS 260C:</b> Visual Neuroscience (A), <b>VS 260D:</b> Seeing in Time, Space and Color (A+), <b>VS 265:</b> Neural Computation (A)
Aug 2018 – May 2022	<b>University of California, Berkeley – Electrical Engineering &amp; Computer Science B.S.</b> <b>Cumulative GPA:</b> 3.746 <b>Upper Division Technical GPA:</b> 3.909 <b>Upper Division Coursework:</b> <b>Math 110:</b> Linear Algebra (A-), <b>EE 120:</b> Signals and Systems (P), <b>EE 126:</b> Probability and Random Processes (P), <b>EE 127:</b> Optimization Models in Engineering (A-), <b>CS 100:</b> Principles & Techniques of Data Science (A), <b>CS 161:</b> Computer Security (A), <b>CS 170:</b> Efficient Algorithms and Intractable Problems (A), <b>CS 182:</b> Designing, Visualizing and Understanding Deep Neural Networks (A-), <b>CS 188:</b> Introduction to Artificial Intelligence (A-), <b>CS 189:</b> Introduction to Machine Learning (A), <b>CS 194-26:</b> Intro to Computer Vision and Computational Photography (A), <b>CS 194-80:</b> Full Stack Deep Learning (A), <b>CS H196A:</b> Senior Honors Thesis Research (A+), <b>CS 280:</b> Computer Vision (A), <b>CS 285:</b> Deep Reinforcement Learning (A), <b>CS 288:</b> Natural Language Processing (A) <b>Research:</b> Worked with Professor <b>Stella Yu</b> , Professor <b>Meng Lin</b> , Professor Yubei Chen, Postdoc Peter Wang. Senior Honors Thesis: <b>Studying Dry Eye Syndrome with Machine Learning.</b>

## Experience

Aug 2023 - Present	<b>Graduate Student Researcher in The Active Vision and Neural Computation Lab</b> Studying neural recordings from free-viewing primates. Building a foundation model for Primate V1. Also modeling neural recordings with Sparse Coding.
Jun 2020 - May 2023	<b>Researcher at ICSI (International Computer Science Institute)</b> <b>The Effects of Whitening in Neural Networks:</b> 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. <b>Meibography Artificial Intelligence:</b> 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	<b>Student Research Assistant at CRC (Clinical Research Center)</b> <b>EasyTear Lipid Layer Analysis:</b> Using computer vision techniques on videos of eye to determine lipid layer motion and thickness. Collaborated with Professor Lin, Professor Yu, Peter Wang.
Aug 2022 - Dec 2022	<b>Machine Learning Engineer at Aizip</b> Startup in the tinyML space where ML models are deployed to IoT devices. Worked on people detection and fall detection.
May 2017 - Aug 2017	<b>NASA Ames Research Center Intern</b> 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

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- 1 | **Artificial Intelligence Models Utilize Lifestyle Factors to Predict Dry Eye-Related Outcomes**  
Andrew Graham, Jiayun Wang, **Tejasvi Kothapalli**, Jennifer Ding, Helen Tasho, Alisa Molina, Vivien Tse, Sarah M. Chang, Stella X. Yu, Meng C. Lin. *Nature Scientific Reports*, 2025
- 2 | **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. *Heliyon*, 2024
- 3 | **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*, 2022
- 4 | **Saving Energy in Homes Using Wi-Fi Device Usage Patterns**  
**Tejasvi Kothapalli**. *International Journal of Energy Optimization and Engineering (IJEEO)*, 2018
- 5 | **Controlling Tensegrity Robots through Evolution using Friction based Actuation**  
**Tejasvi Kothapalli**, Adrian Agogino. *NASA Technical Reports*, 2017

## Abstracts

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- 1 | **Standard models fail to capture positional invariances in marmoset foveal V1**  
**Tejasvi Kothapalli\***, Ryan Ressmeyer\*, Jude Mitchell, Jacob Yates. *Society for Neuroscience*, 2025
- 2 | **Lifestyle and behaviors: predicting clinical signs and symptoms with machine learning**  
Meng C. Lin, Andrew D. Graham, **Tejasvi Kothapalli**, Peter Wang, Jennifer Ding, Vivien Tse, Stella X. Yu. *Association for Research in Vision and Ophthalmology (ARVO)*, 2023
- 3 | **AI provides deeper understanding of Meibomian gland morphology and function**  
Meng C. Lin, Peter Wang, **Tejasvi Kothapalli**, Andrew D. Graham, Stella X. Yu. *American Academy of Optometry (AAOPT)*, 2022

## Honors

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| Aug 2023 - May 2025 | <b>CIVO Fellowship</b><br>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 | <b>EECS Honors Program</b><br>Recognizes EECS students who commit to research, strong academics, and writing a senior thesis.  |

## Teaching & Services

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Aug 2025 - Dec 2025	<b>GSI for Neuroscience 172L: Cognitive and Computational Lab</b> Course teaches experimental and analytical techniques used by cognitive and computational neuroscientists. Led lab sections, content creation, grading, and office hours.
Aug 2023 - September 2024	<b>Program Committee Chair, Bay Area Vision Research Day (BAVRD)</b> Help plan, fundraise, and invite speakers and abstract presenters.
Aug 2023 - Present	<b>CIVO BASIS Coordinator</b> I help organize and teach about general Vision Science to 4th graders around the East Bay. We work with the organization Bay Area Scientists Inspiring Students (BASIS).
May 2022 - Present	<b>Teacher at Inspirit AI</b> Teaching machine learning to high students at Khan Lab School, Bellarmine College Preparatory, Evergreen Valley High School, and Bentley School.

## Talks

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December 2025	<b>CIVO Day:</b> Measuring Sensitivity of V1 activity to eye movements
October 2025	<b>Vision Science Retreat:</b> Standard models fail to capture positional invariances in marmoset foveal V1
September 2025	<b>Bay Area Vision Research Day (BAVRD):</b> Towards a Foundation Model for Primate Visual Cortex
May 2025	<b>Redwood Meeting:</b> V1 Sensitivity to Eye Movements <b>and</b> Predicting V1 with Sparse Coding
December 2024	<b>CIVO Day:</b> High-accuracy retinal input tracking in free-viewing primates

## References

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- 1 | **Jacob Yates**, yates@berkeley.edu  
Professor, Herbert Wertheim School of Vision Science and Optometry, UC Berkeley
- 2 | **Bruno Olshausen**, baolshausen@berkeley.edu  
Professor, Neuroscience and Herbert Wertheim School of Optometry & Vision Science, UC Berkeley  
Director, Redwood Center for Theoretical Neuroscience
- 3 | **Alex Huk**, alexhuk@g.ucla.edu  
Professor, Departments of Psychiatry and Ophthalmology, David Geffen School of Medicine, UCLA  
Director, Fuster Laboratory
- 4 | **Peter Wang**, peterwg@berkeley.edu  
Postdoctoral Scholar, California Institute of Technology
- 5 | **Michael Silver**, masilver@berkeley.edu  
Professor, Neuroscience and Herbert Wertheim School of Optometry & Vision Science, UC Berkeley  
Director, UC Berkeley Center for the Science of Psychedelics
- 6 | **Frederic Theunissen**, theunissen@berkeley.edu  
Professor, Neuroscience and Integrative Biology, UC Berkeley