

Tejas S. Prabhune

prabhune@berkeley.edu | linkedin.com/in/tejas-prabhune | github.com/tejasprabhune | (669) 278-4360

EDUCATION

University of California, Berkeley

Bachelor of Science, Electrical Engineering and Computer Science (EECS)

May 2025

GPA: 3.96/4.00

Related Coursework: Algorithms and Intractable Problems, Data Structures, Machine Learning, Operating Systems and Systems Programming, Optimization Models, Probability and Random Processes, Machine Structures, Discrete Math and Probability, Circuits and Control, Linear Algebra

EXPERIENCE

Meta AI + Berkeley Artificial Intelligence Research (BAIR) Speech Group - Machine Learning Researcher Jan 2024 – Present

- Developing multi-avatar, multi-LLM, audio-visual active perception modeling for natural real-time multi-actor dialogue using diffusion, dGSLM, and reinforcement learning.
- Advised by Dr. Gopala K. Anumanchipalli (BAIR), Jiachen Lian (BAIR), Wei-Ning Hsu (Meta).

Kibsi – Technical Consultant for Machine Learning at Berkeley (ML@B)

Sept 2023 – Jan 2024

- Deploying multi-modal Vision-Transformers in CLIP-ReID and self-supervised SOLIDER frameworks using Pytorch and Tensorflow for real-time object re-identification for real-world client use. Achieving state-of-the-art accuracy and streaming performance at >95% for person ReID and 10 frames per second, respectively.

Nestle – Data and Technical Consultant

Jan 2023 – May 2023

- Designed microservice-based architectures using Magento and Azure for Nestle's global delivery infrastructure to modularize current monolithic structures, streamline DTC & B2B order placement, and predict low stock inventories.
- Investigated market competitors for the best composable architectures used in Fast-Moving Consumer Goods industry.

RESEARCH

Berkeley Artificial Intelligence Research (BAIR) Speech Group – Machine Learning Researcher

May 2023 – Present

- Engineering U-Net and Transformer models for vocal tract MRI segmentation, speech-to-MRI inversion, and high performance offline and real-time 3D visualization on over 5 new inner mouth areas with <150ms latency - submitting to CVPR 2024.
- Implemented Transformer and Gated Recurrent Unit (BiGRU) models to achieve <200ms latency for streaming speech-to-avatar synthesis in Maya - **demo presented at ASRU 2023**, paper submitting to Interspeech 2024.
- Building language learning startup using multilingual vocal articulation visualization and ML integration with React Native and Django.
- Creating custom avatar streaming infrastructures in Unreal Engine to embody paralyzed patients through neural decoding with UCSF.
- Advised by Dr. Gopala K. Anumanchipalli, Peter Wu, arXiv: <https://arxiv.org/abs/2310.16287>

Stanford University – Machine Learning Researcher

May 2021 – Jan 2022

- Implemented contrastive learning algorithms to improve diabetic retinopathy diagnosis in retinal fundus images.
- Reduced necessary labeled training data by 90% with SOTA performance; **paper published in Nature Scientific Reports**.
- Advised by Dr. Daniel Rubin, Dr. Minhaj Nur Alam, DOI: 10.1038/s41598-023-33365-y

Harvard University – Machine Learning Researcher

Jun 2020 – Nov 2021

- Developed ASR methods to automatically generate large audio datasets for keyword spotting models in 4 languages using YouTube, Internet Archive & Google Cloud Speech-to-Text API for **NeurIPS 2021 dataset, Interspeech 2021 paper**.
- Advised by Dr. Vijay Janapa Reddi, Mark Mazumder, DOI: 10.21437/Interspeech.2021-1966

Independent – Machine Learning Researcher

Dec 2020 – Apr 2021

- Independently developed a Vector Quantized Variational Autoencoder that can do vessel segmentation on retinal fundus images regardless of training dataset; improved segmentation by 90%+ across 3 datasets. Represented California as **Top 5 Finalist** at National JSHS Poster Presentation; **paper published in Journal of Student Research** - High School Edition.

EXTRACURRICULARS

Machine Learning at Berkeley (ML@B): Edu Officer in selective club focused on ML research, education, and career development.

DeveloperWeek CloudX Hackathon: Designed website using DeepMotion AI and LanceDB to help athletes compare their form to professionals in 3D. **Won 1st + 2nd place out of 450+ participants:** \$1500 for LanceDB + DeepMotion Challenge.

Parliamentary Debate: Leading club as director to teach debate techniques and organize tournaments. Developed a 200-user open-source website using Google App Engine to collect and store 250+ debate videos/recordings.

SKILLS

- Languages:** Python, Java, C, HTML/CSS/Javascript
- Frameworks:** Tensorflow, PyTorch, Keras, SaaS (AWS, GCP), Firebase, Unreal Engine, Autodesk Maya