Akshita Ramya Kamsali

2108 McCormick Rd, Apt 228, West Lafayette, IN-47906
(765) 586-7034 • akamsali@purdue.edu • akamsali.github.io • akamsali • akamsali

Education

PhD in Electrical and Computer Engineering
Purdue University, IN, USA *Jan 2021 - Present*
GPA: *3.76/4.0*
Courses: Computer Vision, Probabilistic Graphical Models, Deep Learning, Artificial Intelligence, Linear Algebra Applications, Random Variables

B.Tech. in Electrical Engineering with Minor in Biomedical
Indian Institute of Technology(IIT) Hyderabad, India *Aug 2016 - May 2020*
Major GPA: *9.00/10* Minor GPA: *9.83/10*
Courses: Convex Optimization, Statistical Inference, Topics in Information Theory and Coding, Concentration Inequalities

Experience

Robot Vision Lab, Purdue University
Graduate Research Assistant, Prof. Avinash Kak *July 2022 - Present*
- Aligning LLMs to human preferences and culture in low resource languages and evaluate the aligned models.
- Established baseline performance in model alignment using Policy Gradient methods vs. task-based fine tuning.

Elmore Family School of Electrical and Computer Engineering, Purdue University
Graduate Teaching Assistant *Jan 2021 - Present*
- **EE Fundamentals I**: Led and managed class with 700 students, 12 GTAs and 40 UTAs. Implemented continuous feedback system for the lab and made it fit the need of different majors.
- **Computer Security**: GTA for a class of 203 juniors and seniors. Created HWs and exams. Communicated technical concepts in one-on-one and group setups and helped students improve grades.

NeuroAI Lab, Purdue University
Graduate Research Assistant, Dr. Joseph Makin *June 2021 - June 2022*
- Formulated mapping function between hidden representations of self-supervised Speech-to-text models (e.g. wav2vec, DeepSpeech2) and neural responses in different regions of auditory cortex. Obtained an encoding performance of 0.4 - 0.6 R^2 correlation.
- Proposed and led implementation of a novel Convolutional Transformer model for decoding neural activity to text on multiple GPUs at once. Achieved a 8% improvement in average Word Error Rate (WER) over RNN-based baseline on TIMIT dataset.
- Mentor 1 ECE and 1 BME undergradaute student for Handwriting decoding from ECoG using an RNN. Imparted both technical skills and general research practices such as version control and reproducibilty.

University of Tokyo
Exchange Student, Dr. Hideyuki Horii *July 2018 - Aug 2018*
- Analyzed infant mortality rates across different nations and facilities in those countries affecting it through interviews and literature. Communicated with multi-lingual stake holders through written and oral reports.
- Mentored 4 high school students to analyze data and recommend plans to improve premature infant survival rates.

Skills

Technical: `Python`, `git`, `C++`, `C`, `MATLAB`, LaTeX, Linux, Docker, SLURM, bash

ML/Data Science: `PyTorch`, `PyTorch Lightning`, `JAX`, `Tensorflow`, `HuggingFace`, `TRL`, `NumPy`, `OpenCV`, `SKLearn`, `Pandas`, `Tensorboard`, `WandB`

Leadership

President, ECE Graduate Student Association: Raised $12000 for professional development and recreational activities of ECE graduate students. Planned and executed such events with average of 200 participants

Career Team Chair, Purdue Graduate Student Government: Ideated & established the Accountability Club.