

EDUCATION

Master of Science, Computer Science (Artificial Intelligence), University of Southern California Aug 2021-May 2023
Bachelor of Technology, Computer Science and Engineering, Walchand College of Engineering Aug 2015-May 2019

EXPERIENCE

Blackberry Corporation Oct 2022 - Present
Machine Learning Engineering Intern Los Angeles

- Created Automated pipeline for training and evaluation of 2 machine learning models to detect malicious software on MacOS and Windows.
- Developed efficient, multi-threaded algorithms for processing of more than 2 Million large files.

ICAROS Lab, USC May 2022 - Dec 2022
Volunteer Researcher Los Angeles

- Designed and executed experiments to train 8 different Quality Diversity Algorithms with customized reward signals in 6 reinforcement learning environments like “Slime Volley” and “Car Racing”.
- Analysed effects of learning rates on the optimal score in 8 different RL environments.
- Co-Authored “Training Diverse High-Dimensional Controllers by Scaling Covariance Matrix Adaptation MAP-Annealing”

Textify AI Nov 2021- Dec 2021
Natural Language Processing Intern Remote

- Optimized generative pre-trained (GPT-NEO) NLP model to auto-generate Natural language content for academic research proposals.
- Improved sentence acceptance rate by 14.7% by enhancing synonym suggestions.

Dassault Systèmes Solutions Lab June 2019-Jul 2021
Software Engineering Specialist Pune, India

- Increased product usage across organization by 63% by revamping the front end for the Lifecycle Management Service in the CI / CD Pipeline.
- Devised a prototype using NLP and Machine Learning to recommend QA testing scenarios using software requirements specification documents for 2 departments.

Tata Consultancy Services Research and Innovation Dec 2018-Apr 2019
Research Intern New Delhi, India

- Created Novel Metric to analyze Temporal Coherence of labels placed in videos for AR Applications.
- Introduced optical flow to give up to 50x Temporal Coherence improvement for the labels placed in the videos.
- Co-authored “SmartOverlays” published in WACV 2020.

PUBLICATIONS

- **Training Diverse High-Dimensional Controllers by Scaling Covariance Matrix Adaptation MAP-Annealing** PrePrint.
Authors: Bryon Tjanaka, Matthew C. Fontaine, **Aniruddha Kalkar**, Stefanos Nikolaidis
- **SmartOverlays: A Visual Saliency Driven Label Placement for Intelligent Human-Computer Interfaces** IEEE Winter Conference on Applications of Computer Vision (WACV).
Authors: Srinidhi Hegde, Jitendra Maurya, **Aniruddha Kalkar**, Ramya Hebbalaguppe

PROJECTS

Multi-Teacher Knowledge Distillation for Visual Question Answering Systems

- Constructed a light-weight model for VQA systems using ALBEF and VisualBERT as teachers in a multi-teacher setup.
- Model size reduction up to 65x and upto 8x inference speed increase as compared to the teacher models.

Driver Distraction Detection

- Built a driver distraction recognition and notification program based on a live video capture
- Attained 91.08% accuracy for the 10 pre-determined distractions.

TECHNICAL SKILLS

Languages	Python, Javascript, C/C++, Java, C#, HTML, CSS, Angular.js, Node.js, React.js
Libraries & Frameworks	TensorFlow, Pytorch, Keras, OpenCV, matplotlib, Flask, Django
Databases	MySQL, MongoDB, DynamoDB, AWS S3
Tools	AWS SageMaker, AirFlow, MLFlow, Prefect, AWS Batch, AWS EC2, Google Cloud Platform, JIRA