Poojah Ganesan

EDUCATION

ARIZONA STATE UNIVERSITY, Tempe, AZ — Aug 2023 - May 2025
MASTERS OF SCIENCE, COMPUTER SCIENCE | **GPA: 4.0**

SSN COLLEGE OF ENGINEERING, Chennai, IN — Aug 2017 - Jul 2021
BACHELOR OF ENGINEERING, ELECTRONICS AND COMMUNICATION | **GPA 8.2**

EXPERIENCE

LAB , ARIZONA STATE UNIVERSITY, Tempe, AZ
RESEARCH ASSISTANT — Aug 2024 - Present

- Literature Study on Bayesian Optimization

LAB V2, ARIZONA STATE UNIVERSITY, Tempe, AZ
GRADUATE STUDENT ASSISTANT — Jan 2024 - May 2024

- Developed a Movement Generation Pipeline for IARPA-HAYSTAC Project using PyReason and A* algorithm and identified anomalous locations with Isolation Forest, providing feedback to refine the generated path.

OPTISOL BUSINESS SOLUTIONS, Coimbatore, IN
MACHINE LEARNING ENGINEER — Apr 2022 - Jul 2023

- Optimized a real-time Forklift Safety system using OpenVino, achieving 93% accuracy.
- Developed a Nuclei Segmentation pipeline for cancer cell detection in WSI images.
- Led ETL processes for an e-commerce app, enhancing user experience with customized recommendations.

L&T INFOTECH, Chennai, IN
SOFTWARE ENGINEER — Aug 2021 - Apr 2022

- Trained on full stack development and Java 11 Oracle certification and worked with Citi Bank including metadata correction and quality analysis.

SOLARILLION FOUNDATION, Chennai, IN
RESEARCH ASSISTANT — Apr 2020 - Jul 2021

- Developed a Flight Delay Prediction Model using XGBoost, achieving an R^2 score of 0.95.
- Created BP-Net, a deep learning model for blood pressure estimation from PPG waveforms, with rapid inference on Raspberry Pi 4.

PROJECTS

GPU ACCELERATED DISTRIBUTED ML TRAINING FRAMEWORKS

- Utilized Data and Model Parallel methods to evaluate Logistic Regression, CNN, ResNet50, and ViT on CIFAR10 and CIFAR100 datasets across 1, 2, and 4 GPUs.

AUTONOMOUS DRIVING WITH RL : PARKING AND HIGHWAY

- Implemented SAC, DDPG, DQN, and PPO from scratch with a focus on 'parking' and 'highway lane' scenarios to simulate real-world autonomous driving conditions
- Incorporated KL Divergence as an implicit reward function and achieved accuracy rates of 95% (SAC), 92% (DDPG), 90% (DQN) and 93% (PPO)

CAD SYSTEM PROTOTYPE FOR ANALYSIS OF CHEST X-RAYS

- Attained 0.81 accuracy with Swin Transformer for classification; Faster R-CNN for localization with IoU of 0.8, and UperNet for segmentation with IoU of 0.9

TALKING TBD: TOWARDS A MORE TRANSPARENT MODULAR NETWORK

- Enhanced PnP-VQA's Symbol Grounding ability and transparency using TbD model, maintaining 93.7% accuracy and achieved 87.5% accuracy in complex reasoning tasks.

ZERO SHOT TEXT TO VIDEO GENERATION

- Adapted Stable Diffusion for video generation from text descriptions, enriching latent codes with motion dynamics and introducing cross-frame attention for scene consistency and object identity preservation, achieving a CLIP score of 31.19.

STOLEN CAR DETECTION

- Implemented Motion Eye OS on Raspberry Pi and integrated Mask R-CNN with Nomeroffnet for license plate detection and OCR recognition, with IoU of 0.87.

DYNAMIC ALLOCATION OF UE-VBS IN 5G NETWORKS

- Investigated Base Station deployment using Mean Shift and K-Means Clustering for UEVBS selection algorithm, leading to a 30% increase in network efficiency.
- Outperformed Random Selection and 4G networks with cluster size 5 with power consumption: 15-30db; QoS: 0.7-0.9; Sum Rate: 10× 108 bps.

CONTACT INFORMATION

Email
(425) 273-2187
Github
LinkedIn
Tempe, AZ

SKILLS

Technical Skills: Machine Learning, Deep Learning, Image Processing, Object Detection, Semantic Segmentation and Localization, Feature Extraction, Data Augmentation, Annotation, Diffusion.
Languages: C, C++, Python, R, C#, SQL, Java, Javascript, HTML, CSS.
Framework: Tensorflow, Pytorch, Keras, OpenCV, Pandas, Scikit-Learn, Numpy, Matplotlib, Seaborn, Tkinter.
Technologies: Git, Confluence, AWS, OpenVino, Azure, Docker, LATEX, Label Annotator, Raspberry Pi and Intel NUC Edge Device.

LEADERSHIP AND RESPONSIBILITIES

Domain Head, ASU AI Society: Led 15 workshops covering fundamental concepts of AI.
Placement Coordinator, SSN: Obtained 92% placement rate and coordinated over 100 recruitment drives.
Volunteering, MakeADifference: Taught physics to high school students from children's homes, dedicating 300+ hours of community service.
Event Coordinator, SSN: Coordinated 25 events in technical and cultural fests, including a nation-wide hackathon with 150 participants.

PUBLICATIONS AND AWARDS

IEEE ICMLA, Dec. 2021., "BP-Net: Efficient Deep Learning for Continuous Arterial Blood Pressure Estimation using Photoplethysmogram."
International Journal of Internet of Things and Web Services 6 (2022)., "Dynamic Vehicular Routing with Pollution Metric using Internet of Things."
Winner, Smart India Hackathon, 2019 Software Edition, "Reduction of Carbon Footprint in IoT devices." for a reduction of 81% carbon footprint using timing channel and protocol overhead reduction.

RELEVANT COURSES

Digital Image Processing, Digital Video Processing, Perceptual Reasoning & Symbol Grounding, Reinforcement Learning, Data Intensive Systems in ML, Knowledge Representation & Reasoning, Machine Learning Techniques, Video Analytics, Robotics & Automation, Discrete Time Signal Processing, Linear Algebra, Probability and Random Process.