Manogna Sreenivas

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Education

Indian Institute of Science — Bengaluru, India
PhD in Electrical Engineering, CGPA: 9.0/10.0 — *Oct 2020-Present*

National Institute of Technology Karnataka — Surathkal, India
B.Tech in Electrical and Electronics Engineering, CGPA: 8.72/10.0 — *Aug 2013- Apr 2017*

R.V. P.U. College — Bengaluru, India
Karnataka Pre University Board Examination, Score: 94.3% — *June 2011- Apr 2013*

Research Work

- **Unsupervised Domain Adaptation:** Designing methods to learn using labeled source along with unlabeled target domain data to obtain robust representations generalizing across domains.
- **Cross-Domain Few Shot Learning**: Designing effective methods capable of adapting a base model to an unseen task from an unseen domain given limited training samples.
- **Source-Free Domain Adaptation**: The objective is to adapt a model trained on a source domain to a target domain using only unlabelled samples.
- **Test-Time Adaptation**: The goal is to adapt a source trained model to a test domain in an online manner.

Publications

- **pSTarC: Pseudo Source Guided Target Clustering for Fully Test-Time Adaptation**, Manogna Sreenivas, Goirik Chakrabarty, and Soma Biswas, *WACV 2024* [Paper]
- **PhISH-Net: Physics Inspired System for High Resolution Underwater Image Enhancement**, Aditya Chandrasekar, Manogna Sreenivas, and Soma Biswas, *WACV 2024.*
- **SANTA: Source Anchoring Network and Target Alignment for Continual Test Time Adaptation**, Goirik Chakrabarty, Manogna Sreenivas, and Soma Biswas, *Preprint, Under review* [Paper]
- **A Simple Signal for Domain Shift**, Goirik Chakrabarty, Manogna Sreenivas, and Soma Biswas, *Visual Continual Learning, ICCVW 2023* [Paper]
- **Similar Class Style Augmentation for Efficient Cross-Domain Few-Shot Learning**, Manogna Sreenivas and Soma Biswas, *CVPRW 2023* [Paper]
- **JumpStyle: A Framework for Data-Efficient Online Adaptation**, Aakash Singh, Manogna Sreenivas, and Soma Biswas, *ICLRW 2023* [Paper]
- **Domain Shift Signal for low resource Continuous Test Time Adaptation**, Goirik Chakrabarty, Manogna Sreenivas, and Soma Biswas, *ICLRW 2023* [Paper]
- **Improved Cross-Dataset Facial Expression Recognition by Handling Data Imbalance and Feature Confusion**, Manogna Sreenivas, Sawa Takamuku, Soma Biswas, Aditya Chepuri, Balasubramanian Vengatesan, Naotake Natori, *ECCVW 2022* [Paper]

Teaching Experience

Mathematics for Machine Learning
Visiting Faculty, PES University — *Jan-Apr 2023*

E9246 Advanced Image Processing
Teaching Assistant, IISc — *Jan-Apr 2023*

E9201 Digital Signal Processing
Teaching Assistant, IISc — *Aug-Dec 2022, 2023*

E9241 Digital Image Processing
Teaching Assistant, IISc *Aug-Dec 2022, 2023*

Deep Learning for Computer Vision
Teaching Assistant, NPTEL *Aug-Dec 2022*

Work Experience

PathPartner Technology Bengaluru, India
Software Engineer *July 2017 – August 2020*

- **Face Detector for Driver Monitoring System**: Developed a custom CNN based Face Detector, ported and integrated into an SDK with support for hardware platforms from Intel, ARM, Qualcomm, Cadence etc.
- **Porting Deep Learning models to edge devices**: Used toolkits like SNPE, OpenVINO, ArmNN to port models trained in TensorFlow/PyTorch to their respective hardware.
- **DSP Optimization**: Developed SIMD vectorized algorithms using intrisics to support TensorFlow APIs on Cadence Tensilica Vision DSPs.

Wipro Technologies Bengaluru, India
Intern *April 2016 – June 2016*

- **Pedestrian Detection:** Explored classical feature extraction methods like HOG along with SVM classifier to perform pedestrian detection. This work was done as a part of *Wipro Autonomous Vehicle* project.

Technical Skills

Programming Languages: C, Python
Libraries: OpenCV, PyTorch, TensorFlow

Relevant Coursework

Matrix Theory, Stochastic Models and Applications, Digital Image Processing, Advanced Image Processing, Pattern Recognition and Neural Networks, Advanced Deep Learning

Certifications

- Machine Learning by Stanford University on Coursera, Jan 2016.
- Deep Learning Specialization by deeplearning.ai on Coursera, Feb 2020.
- Reinforcement Learning by Center for Continuing Education, IISc, May 2020.

Achievements

- Recipient of the Prime Minister's Research Fellowship (PMRF), Jan 2022 - Present.
- Member of the winning team, Bosch Ideation Contest conducted as a part of Bosch Day, 2016 at NITK.
- Secured a state rank of 254 in Joint Entrance Exam (JEE) Mains, 2013
- Secured a rank of 172 in Karnataka Common Entrance Test (K-CET), 2013

Other Activities

- Mentor at *Coached*, guiding B.Tech students from Tier-3 engineering colleges to prepare for job interviews.
- Member of *TechConnect*, PathPartner Technology, organising technical talks and events, Mar 2018 - Aug 2020.
- Institute Coordinator, *SPICMACAY*, Mangalore Chapter, Jul 2016 - Apr 2017.
- Executive Member, *Technites*, ENGINEER, NITK's annual technical fest, Oct 2014 - Oct 2016.