

EXPERIENCE

- **Intel Technologies** Bangalore, India
Applied Research Scientist Mar. 2020 - Present
 - **Few-Shot Road Object Detection:**
 - * Leading the development of **Few-Shot Object Detection** (FSOD) and **Few-Shot Incremental Learning** (FSIL) algorithms in *Pytorch* for detecting rare or unseen road objects in unconstrained driving environments and collected the first *Few-Shot India Driving dataset*.
 - * Mentored two interns whose work on Few-Shot Object Detection has been submitted to conferences like ICCV and WACV.
- **Intel Technologies** Bangalore, India
Deep Learning Research and Development Engineer May 2019 - Mar. 2020
 - **Driver Monitoring System:**
 - * End-to-End *edge-inferencing* framework to detect driver behavior in ADAS systems by *facial landmark detection* and *gaze estimation*.
 - * Enabled real-time inference capability on very low-compute edge hardware on *Intel OpenVINO* toolkit.
 - **Health AI Workload Profiler:**
 - * Performance bench-marking framework for automated *simulation and profiling* of health AI workloads in resource constrained scenarios.
 - * Offered as a service using *Kubernetes* and *docker* for on-boarding new customer models.
- **Intel Technologies** Bangalore, India
Undergraduate Technical Intern Dec. 2017 - May 2018
 - **Multi-Hardware workload Deployment Toolkit:**
 - * Developed Edge Inferencing framework to deploy Computer Vision models on multiple edge hardwares including *Intel Neural Compute Sticks*.
 - * Developed an SDK in *python* which creates sub-graphs of a neural network, deploys each unit on different hardwares and combines the prediction without performance degradation.

EDUCATION

- **Vellore Institute of Technology** Chennai, India
BTech.in Electrical and Electronics Engineering; CGPA: 9.68/10.0 (Gold Medalist) Jun. 2014 – May. 2018

PAPERS

- **Meta-Guided Metric Learner for Overcoming Class Confusion in FSOD** NeurIPS-W 2021
Co-Authors: Dr.Anbumani Subramanian and Kshitij Agrawal Oct. 2021
- **Attention Guided Cosine Margin for Overcoming Class-Imbalance in FSOD** WACV-W 2022
Co-Authors: Ashutosh Agarwal, Dr.Anbumani Subramanian and Dr.Chetan Arora Oct. 2021
- **Few-Shot Batch Incremental Road Object Detection via Detector Fusion** ICCV-W 2021
Co-Authors: Anuj Tambwekar, Kshitij Agrawal and Dr.Anbumani Subramanian Aug. 2021
- **Few-Shot Learning for Road Object Detection** AAAI-W 2021
Co-Authors: Kshitij Agrawal and Dr.Anbumani Subramanian Feb. 2021
- **Learning Distinguishable Feature Representations for FSIL** Preprint
Co-Authors: Divya Kothandaraman, Dr.Anbumani Subramanian and Dr.Dinesh Manocha Aug. 2021
- **Enabling Baytrail GPUs for Deep Learning Inferencing on Embedded Hardware** Intel SWPC 2019
Co-Authors: Pankaj Rabha Dec. 2019

Other publications in Computer Science and Electrical Engineering are available on my [Google Scholar](#) profile.

PATENTS

- **Virtual Electrical Networks** USPTO
Dec. 2020
Co-Authors: Dileep Paruchuri, Pranesh SK and Yashasvi Bhargava
 - Virtualization of microgrid infrastructures to perform non-invasive identification of faulty nodes and to achieve load balancing for the conservation of energy resources.
- **IoT Based Industrial Energy Monitoring and Control System** Indian Patent Office
Under Review, Apr. 2018
Dr. Gnana Swathika O.V and Madhav Bhatia
 - Smart Energy monitoring and control infrastructure to collect, analyse and visualize electrical energy utilization data from microgrids to address critical faults without human supervision.

AWARDS AND RECOGNITIONS

Division Recognition Award , VSG team, Intel India	One among 45 employees	2021
Amur Tiger Re-Identification challenge , ICCV (Pose task)	3 rd globally / 10 teams	2019
Facebook AI Research Self Supervised Learning Challenge , ICCV	3 rd globally / 6 teams	2019
Rising Star of the Year , VSG team, Intel India	One among 26 employees	2019
Gold Medalist , School of Electrical Engg., VIT University	1 st among 800 students	2018

PROJECTS

- **Let's Play Football**: Reinforcement learning model developed in *Pytorch* based on Proximity Policy Optimization technique (PPO) to train agents in playing football on the *Google Research Football* dataset.
- **Tiger Pose Estimation in the Wild**: Implemented a *pose estimation* network in *Pytorch* based on multi-scale High-Resolution Network (HRNet) to track siberian tigers in the wild.

SERVICES AND VOLUNTEERING

- **Speaker, Guest Lecture on - Can Machines See Like Humans?** Nov. 2021
VIT University, Chennai Campus
Delivered a guest lecture to undergraduate students on the advancements in computer vision and highlight the importance of interdisciplinary research.
- **Panelist, Ideathon Contest 2021** Nov. 2021
VIT University, Chennai Campus
Part of the experts committee to judge multiple shortlisted ideas created by university students in the fields of Healthcare, agriculture and education.
- **Speaker, Technical Leadership Development Session (Asia Pacific)** Aug. 2021
Intel India
Delivered a talk on Few-Shot Learning for Detection Less-Occuring Road Objects for Driving Systems.
- **Reviewer, British Machine Vision Conference (BMVC)** Jul. 2021
Virtual
Reviewed multiple main track papers on general computer vision tasks.
- **Invited Speaker, EPIC Conference** Feb. 2020
Vishakhapattanam, India
Delivered an invited talk on "Learning to Learn" - A Meta-Learning approach to computer vision tasks.
- **Artificial Intelligence Trainer** Dec. 2020 - Present
Intel India
Training a group of Intel Engineers on key application areas of Deep Learning.
- **Student Mentor, Intel Science and Engineering Fair** May 2019
New-Delhi, India
Mentored two student groups, representing team India in ISEF.

SKILLS

- **Languages**: Python, C++, C
- **Software Frameworks**: PyTorch, Tensorflow, OpenCV, Sci-kit learn
- **Artificial Intelligence Techniques**: Self-Supervision, Object Detection, Few-Shot Learning, Federated Learning