

# TARUN KALLURI

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## RESEARCH INTERESTS

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- **Label Efficient Learning:** Self/semi/weakly-supervised learning in Computer Vision.
- **Domain Adaptation:** Domain Adaptation, Transfer Learning.
- **Trustworthy ML:** Fairness, Explainability and Robustness in AI.

## EDUCATION

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- **University of California San Diego (UCSD)** *Fall 2019 - Present*  
PhD in Center for Visual Computing *CGPA: 3.9/4.0*
- **Indian Institute of Technology (I.I.T.) Guwahati** *May 2016*  
Major in Electronics and Communication (ECE), with minor in CSE. *CGPA: 9.03/10.0*

## RESEARCH & PROFESSIONAL EXPERIENCE

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- **PhD research**, UC San Diego, CA, USA *Fall 2019-*  
**Mentors:** Manmohan Chandraker  
Worked on multiple projects on unsupervised domain adaptation and transfer learning on large-scale datasets and fine-grained datasets with multiple top-tier publications in CVPR, ICCV, ECCV and WACV.
- **Facebook (Meta) AI Research**, Menlo Park, CA, USA *Summer 2021*  
**Mentors:** Du Tran, Lorenzo Torresani, Heng Wang  
Built novel solutions towards robust and **open world instance segmentation** using hybrid approaches combining top-down and bottom-up supervision resulting in  $\sim 5\%$  mAR improvement on unseen test classes.
- **Facebook (Meta) AI Research**, Menlo Park, CA, USA *Summer 2020*  
**Mentors:** Du Tran, Deepak Pathak  
Developed a **fast and efficient video frame interpolation** technique, without requiring any flow or depth information with up to  $6\times$  improvements in inference speed.
- **Applied Research Labs**, IIIT Hyderabad, India *Sep. 2017 - Aug. 2019*  
**Mentors:** C.V. Jawahar  
Semi-supervised learning for **semantic segmentation on Indian roads**. Devised a novel feature alignment module achieving SOTA result using as few as 50 labeled images from Indian roads.
- **Oracle India Pvt. Ltd.**, Bengaluru, India *July. 2016 - Aug. 2017*  
**Role:** Applied Data Scientist - SaaS Provisioning  
Developed automation tools for diagnosis of large scale cloud instance provisioning, upgrade and patching.

## PUBLICATIONS

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- **GeoNet: Benchmarking Unsupervised Adaptation across Geographies.** Tarun Kalluri, Wangdong Xu, Manmohan Chandraker. **CVPR, 2023.**
- **Open-world Instance Segmentation: Top-down Learning with Bottom-up Supervision .** Tarun Kalluri, Weiyao Wang, Heng Wang, Manmohan Chandraker, Lorenzo Toresani, Du Tran **arxiv, 2023.**
- **MemSAC: Memory Augmented Sample Consistency for Large-Scale Domain Adaptation.** Tarun Kalluri, Astuti Sharma, Manmohan Chandraker. **ECCV, 2022.**
- **FLAVR: Flow-Agnostic Video Representations for Fast Frame Interpolation.** Tarun Kalluri, Deepak Pathak, Manmohan Chandraker, Du Tran. **WACV, 2023. [Best Paper Finalist]**
- **Cluster-to-adapt: Few Shot Domain Adaptation for Semantic Segmentation across Disjoint Labels ,** Tarun Kalluri, Manmohan Chandraker. **L3D-VIU Workshop, CVPR, 2022.**
- **Instance Level Affinity Based Transfer for Unsupervised Domain Adaptation** Astuti Sharma, Tarun Kalluri, Manmohan Chandraker. **CVPR, 2021.**

- **Universal Semi-supervised Semantic Segmentation.** Tarun Kalluri, Girish Varma, Manmohan Chandraker, Jawahar, C.V. **ICCV, 2019.**
- **Semantic Segmentation Datasets for Resource Constrained Training.** Tarun Kalluri, Ashutosh Misra\*, Sudhir Kumar, Girish Varma, Anbumani Subramanian, Manmohan Chandraker, Jawahar, C.V. In **NCVPRIPG 2019.** [Oral]

## SKILLS

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- **Programming Language:** MATLAB, C++, Python, Verilog, VHDL, Java, HTML/CSS, SQL, Bash/Unix.
- **Software Packages:** TensorFlow, PyTorch, OpenCV, Jupyter, R, Pandas, Keras, Scikit-learn.

## TALKS & PRESENTATIONS

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- **Domain adaptation for urban scene understanding**
  - *Augmented Reality and Self-Driving workshop*, Qualcomm San Diego, June 2020.
  - *SIAM Conference on Computational Science and Engineering*, March 2021.
- **MemSAC: Memory augmented consistency for large-scale domain adaptation**
  - *Pixel Cafe*, CSE UCSD, Feb 2022.

## ACADEMIC SERVICE

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- **Reviewer:** ICLR 2022, CVPR 2022, ECCV 2022, AAAI 2022, NeurIPS 2022, WACV 2022, TMLR, Pattern Recognition Journal.
- **Co-Organizer:** *Multiple Object Tracking and Segmentation in Complex Environments* workshop in ECCV 2022.

## HONORS & AWARDS

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- Selected as best paper finalist at WACV 2023 for the work on FLAVR. 2023
- Selected as best reviewer at ICLR 2022, NeurIPS 2022. 2022
- Recipient of IPE PhD fellowship (link) 2020-21 for contribution towards practical ethics in AI. 2021