TARUN KALLURI

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RESEARCH INTERESTS

- **Trustworthy GenAI:** Fairness, bias, robustness and evaluation in generative AI models.
- **Label Efficient Learning:** Domain adaptation, self/semi/weakly-supervised learning, multimodal learning.

EDUCATION

- **University of California San Diego (UCSD)** *Fall 2019 - Present*
  PhD, Computer Vision & Machine Learning, Advisor: Manmohan Chandraker
  Research on unsupervised domain adaptation and robustness in CV/ML with multiple **first-authored top-tier publications** in CVPR, ICCV, ICML and ECCV.
- **Indian Institute of Technology (I.I.T.) Guwahati** *May 2016*
  B.Tech; Major: ECE, Minor: CSE.

RESEARCH EXPERIENCE

- ***Google AI Research*** *Mountain View, Summer 2023*
  Mentors: Jeremiah Liu, Kihyuk Sohn
  Research on generation and editing capabilities of **text-to-image models to improve cross-domain robustness**.
- ***Facebook (Meta) AI Research*** *Menlo Park, Summer 2021*
  Mentors: Du Tran, Lorrenzo Torresani, Heng Wang
  Open world instance segmentation by combining top-down and bottom-up supervision resulting in $\sim 5\%$ mAR improvement on unseen test classes.
- ***Facebook (Meta) AI Research*** *Menlo Park, Summer 2020*
  Mentors: Du Tran, Deepak Pathak
  Developed **Fast and efficient video frame interpolation**, with state-of-the-art quality and $6\times$ improvements in inference speed. Resulting paper was **best paper finalist** at WACV 2023.
- ***Student Researcher, IIIT Hyderabad*** *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. Work published at ICCV'19.

SELECTED PUBLICATIONS [GOOGLE SCHOLAR FOR FULL LIST]

- **UDA-Bench: Revisiting Common Assumptions in Unsupervised Domain Adaptation Using a Standardized Framework**. **Tarun Kalluri**, Sreyas Ravichandran, Manmohan Chandraker. **ECCV, 2024.**
- **Tell, Don't Show! Language Guidance Eases Transfer Across Domains in Images and Videos**. **Tarun Kalluri**, Bodhisattwa Majumder, Manmohan Chandraker. **ICML, 2024.**
- **Robust Disaster Assessment from Aerial Imagery Using Text-to-Image Synthetic Data.** **Tarun Kalluri**, Jihyeon Lee, Kihyuk Sohn, Sahil Singla, Manmohan Chandraker, Joseph Xu, Jeremiah Liu. **CVPRW, 2024.**
- **Open-world Instance Segmentation: Top-down Learning with Bottom-up Supervision** . **Tarun Kalluri**, Weiyao Wang, Heng Wang, Manmohan Chandraker, Lorenzo Toresani, Du Tran. **CVPRW, 2024.**
- **GeoNet: Benchmarking Unsupervised Adaptation across Geographies**. **Tarun Kalluri**, Wangdong Xu, Manmohan Chandraker. **CVPR, 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.** [Oral, Best Paper Finalist]
- **Universal Semi-supervised Semantic Segmentation**. **Tarun Kalluri**, Girish Varma, Manmohan Chandraker, Jawahar, C.V. **ICCV, 2019.**

SKILLS

- **Machine Learning:** PyTorch, JAX/FLAX, Scikit-Learn, Tensorflow.
- **Programming Language:** MATLAB, C++, Python, Verilog, VHDL, Java, HTML/CSS, SQL, Bash/Unix, Git.
- **Software Packages:** OpenCV, Jupyter, R, Pandas, Keras, Numpy, Matplotlib, Tableau.

LEADERSHIP AND ACADEMIC SERVICE

- **Main Organizer:** 1st *Workshop and Challenge on Robust Computer Vision Across Geographies* in ICCV 2023 with a participation of more than 50 teams for the challenge [Link].
- **Co-Organizer**: *Multiple Object Tracking and Segmentation in Complex Environments* workshop in ECCV 2022 with a participation of more than 100 teams for the challenge [Link].
- **Reviewer:** NeurIPS (2023,22,21), ICCV 2023, CVPR (2023,22), ICLR (2023,22), ECCV 2022, AAAI 2022, WACV 2022, TMLR, Pattern Recognition Journal. (**Best Reviewer Award at ICLR 2022 and NeurIPS 2022**).
- **Open Source: 475+ stars** on GitHub for open-source contribution with multiple widely adopted codebases and datasets [Link].

HONORS & AWARDS

- Selected as **Best Paper Finalist** at WACV 2023 for the work on FLAVR (Top 12 out of 641 papers, Top 2%). *2023*
- Selected as best reviewer for ICLR 2022, NeurIPS 2022. *2022*
- Recipient of IPE PhD fellowship (link) 2020-21 for research towards practical ethics in AI. *2021*

PROFESSIONAL EXPERIENCE

- **Oracle India Pvt. Ltd.**, Bengaluru, India *July. 2016 - Aug. 2017*
  Role: Data Scientist - SaaS Provisioning

MENTORSHIP EXPERIENCE

- Astuti Sharma (Current: Research Engineer, Google)
- Sreyas Ravichandran (Current: Masters, UC San Diego)
- Wangdong Xu (Current: Masters, UC San Diego)