Calvin-Khang **Ta**

Computer Vision Researcher

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Education

University of California, Riverside — *Riverside, CA*

PhD Computer Science — *2024 (Expected)*

GPA: 3.5

University of California, Riverside — *Riverside, CA*

B.S. Computer Science — *2019*

GPA: 3.3

Selected Publications

GAMA: Generative Adversarial Multi-Object Scene Attacks

Abhishek Aich*, Calvin-Khang Ta*, Akash Gupta, Chengyu Song, Srikanth V Krishnamurthy, M Salman Asif, Amit K Roy-Chowdhury

Advances in Neural Information Processing Systems 36: Annual Conference on Neural Information Processing Systems 2022, NeurIPS 2022, 2022

Poisson2Sparse: Self-supervised Poisson Denoising from a Single Image

Calvin-Khang Ta*, Abhishek Aich*, Akash Gupta, Amit K Roy-Chowdhury

Medical Image Computing and Computer Assisted Intervention–MICCAI 2022: 25th International Conference, Singapore, September 18–22, 2022, Proceedings, Part VIII, 2022

Experience

University of California, Riverside | Video Computing Group — *Riverside, CA*

Graduate Research Assistant — *Jan. 2020 - PRESENT*

- Conducting research into fundamental computer vision and machine learning problems.
- Developed automated image analysis pipelines for biological modeling research of Shoot Apical Meristem of Arabidopsis and increasing throughput of existing code base by 400%.
- Developed a novel self-supervised image enhancement algorithm through exploring sparse representations and implicit network priors which beat prior state of the art methods for Poisson denoising.
- Developed a novel method for generating adversarial attacks on deep learning based multi object classifiers across domains leveraging joint image and language representations from pretrained CLIP models.
- Currently working on domain adaptation with applications towards 3D body shape estimation.

Dolby Laboratories — *Sunnyvale, CA*

Video Coding Research Intern — *June 2023 - Sept. 2023*

- Developed novel method for improving deep learning-based video compression models BD rate by 3% over internal baseline model.
- Research and implemented state of the art video compression algorithms using deep learning to improve efficiency.
- Increased training speed by over 40% and reducing the amount of time needed training by 2 days.
- Work resulted in a patent disclosure and received an inventor award.

Vimaan Robotics — *Santa Clara, CA*

Computer Vision / Machine Learning Research Intern — *June 2022 - Sept. 2022*

- Research and implemented state of the art image de-blurring algorithms for use on internal datasets and products.
- Investigate image quality metrics for quantifying the importance of samples in a dataset with respect to a given task.

Amazon.com — *United States*

Software Engineering Intern — *June. 2018 - Sept. 2020*

- Worked at Amazon over three summers with projects ranging from Machine Learning to full-stack development across a variety of teams.

Skills

Computer Vision | Machine Learning	Neural Networks, GANs, Object Detection, Tracking, 3D Pose Estimation, Image Restoration, Self-Supervised Learning, Adversarial Machine Learning, Vision-Language Models
Languages	Python, C/C++, Java, MATLAB, Shell Script
Libraries|Tools	Git, cmake, nmap, vagrant, ansible, Unity, OpenCV, numpy, pandas, Pytorch, AWS, Docker