

KANCHANA RANASINGHE

kranasinghe@cs.stonybrook.edu · <http://kahnchana.github.io/>

EDUCATION

Stony Brook University, NY, USA

PhD in Computer Science; GPA: 3.95 / 4.00

Aug 2021 - Present

University of Moratuwa, Sri Lanka

BSc in Engineering; GPA: 3.95/4.20; Awarded Most Outstanding Graduand of the Year

Dec 2015 - Jan 2020

RESEARCH EXPERIENCE

Apple, Cupertino, USA - Machine Learning Research Intern

May 2022 - Sep 2022

- Multi-modal self-supervised representation learning
- Interpretability and robustness of vision language models

MBZUAI, Abu Dhabi, UAE - Research Assistant

Nov 2020 - Aug 2021

- Representation learning: contrastive losses, self-supervised video analysis (ICCV '21, CVPR '22)
- Interpretability, robustness, and adversarial attacks for vision transformers (NeurIPS '21, ICLR '22)
- Generative modelling for multi-modal output spaces (ICLR '21)

VeracityAI, Colombo, Sri Lanka

Machine Learning Engineer

Feb 2020 - Oct 2020

Associate Data Scientist

Jan 2019 - Jan 2020

- Leading team of three associate data scientists
- Vehicle damage detection system: efficient mobile models, instance segmentation

FiveAI, Cambridge, UK - Research Intern

June 2018 - Dec 2018

- Perception team of self-driving startup
- 3D orientation estimation: improve occluded object handling in videos with synthetic data

SELECTED PUBLICATIONS

Self-supervised Video Transformers

CVPR, 2022 (oral)

K Ranasinghe, M Naseer, S Khan, F Khan, M Ryoo

On Improving Adversarial Transferability of Vision Transformers

ICLR, 2022 (spotlight)

M Naseer, K Ranasinghe, S Khan, F Khan, F Porikli

Intriguing Properties of Vision Transformers

NeurIPS, 2021 (spotlight)

M Naseer, K Ranasinghe, S Khan, M Hayat, F Khan, M Yang

Orthogonal Projection Loss

ICCV, 2021

K Ranasinghe, M Naseer, M Hayat, S Khan, F Khan

Conditional Generative Modeling via Learning the Latent Space

ICLR, 2021

S. Ramasinghe, K Ranasinghe, Salman Khan, Nick Barnes, and Stephen Gould

Bipartite Conditional Random Fields for Panoptic Segmentation

BMVC, 2020 (oral)

S. Jayasumana, K Ranasinghe, M. Jayawardhana, S. Liyanaarachchi and H. Ranasinghe

Combined Static & Motion Features for Deep-Networks Based Activity Recognition in Videos

IEEE Transactions on Circuits and Systems for Video Technology, vol. 29, no. 9, pp. 2693-2707, Sept. 2019.

S. Ramasinghe, J. Rajasegaran, V. Jayasundara, K Ranasinghe, R. Rodrigo and A. A. Pasqual,

SELECTED AWARDS

Most Outstanding Graduand of the Year - University of Moratuwa, Sri Lanka

2020

Mahapola Merit Scholarship - Ranked 13th in Sri Lanka at GCE Advanced Level Examination

2014

Ranked 296th / Represented Sri Lanka - International Mathematical Olympiad (IMO), Columbia

2013

Bronze Medalist / Represented Sri Lanka - International Mathematics Competition, South Korea

2010

National Champion / Represented Sri Lanka - IGNOU UNESCO Science Olympiad, India

2011

PROFESSIONAL ACTIVITIES

Conference Peer Reviewer: CVPR, ICCV, ECCV, NeurIPS, BMVC, ICRA	2020 - 2022
Journal Peer Reviewer: IEEE Transactions on Circuits and Systems for Video Technology	2017 - 2018
Teaching Assistant: Stony Brook University, Computer Science Department	2021 - 2022

SKILLS

Languages: Python	Frameworks: PyTorch, Tensorflow, Numpy
Experience: Computer Vision, Video Understanding, Machine Learning	

ADDITIONAL RESEARCH PROJECTS

Self Supervised Learning	Mar 2020 - Oct 2020
<ul style="list-style-type: none">• Research on state-of-the-art conditional generative modeling approaches, their performance in multi-modal spaces, and leveraging generative models for self-supervised learning• Experimentation with a range of state-of-the-art generative adversarial networks (GANs) on standard image datasets and evaluating performance in terms of accuracy, speed, and computational overhead	
Object Tracking and Segmentation	Jan 2019 - Jan 2020
<ul style="list-style-type: none">• Research on combining Siamese Trackers and recurrent neural networks (LSTM) to simultaneously exploit appearance and spatial information for multi-object tracking, developing unique approach for occlusion aware object tracking, and analyzing effectiveness of BEV space projections for spatial tracking• Research on panoptic segmentation using conditional random fields, development of novel information fusion layer achieving state-of-the-art performance	
Plant Disease Detection	June 2017 - June 2018
<ul style="list-style-type: none">• Developing of plant-leaf based disease detection system from multi-spectral image feeds (NIR/RGB spectra) and implementing transfer learning based training of CNNs on small datasets of domain-specific images• Project deployed using mobile app with edge inference and recognized as a Top Initiative at National Tech Awards	

HACKATHON EXPERIENCE

Finalists - Presidential Hackathon organized by the Government of Taiwan	Taiwan, 2019
Asia-Pacific Runners-Up - Innovate FPGA organized by Intel and Terasic	International, 2018
Champions & Best Data Scientist - Datathon organized by Axiata	Colombo, 2019
Champions - CodeSprint 3.0 organized by IdeaMart & IIT	Colombo, 2018

VOLUNTEER EXPERIENCE / INTERESTS

Captain - University of Moratuwa Debating Team	2016/2017
President - OREPA Student Chapter (volunteer society)	2019
Secretary - Mathematics Society of University of Moratuwa	2017/2018
Executive Committee - Sri Lanka Model United Nations	2015