

Srikanth Malla

SUNNYVALE · CALIFORNIA · USA

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Research Interest

My passion is the quest for understanding and modeling visual intelligence in humans, particularly in applications involving behavior understanding, prediction, 3D scene modeling, and reasoning. The research problems that I would like to pursue include learning with limited data, generalizing concepts across different domains, and learning data representations without labels through unsupervised or weakly supervised methods. I would like to apply solutions to these problems in different domains, including intelligent mobility, 3D modeling, and robotics.

Education

Worcester Polytechnic Institute

Worcester, Massachusetts, USA

M.Sc. ROBOTICS ENGINEERING, GPA: 4.0/4.0

Jan 2017 - Aug 2018

- **Honda Research Institute**, San Jose, CA — *Research Internship Program Spring, Summer 2018*

Vellore Institute of Technology

Vellore, India

B.TECH. IN ELECTRONICS AND INSTRUMENTATION, GPA: 8.79/10

July 2012 - May 2016

- **Carnegie Mellon University**, Pittsburgh, PA — *Semester Abroad Fall 2015, Spring 2016*

Research Experience

Kinetic Automation

Mountain View, California, USA

STAFF RESEARCH ENGINEER - MACHINE LEARNING

Mar 22-Present

Responsible for Machine learning related tasks simulation, data creation, algorithm design, and deployment.

RESEARCH ENGINEER

Oct 21-Feb 22

Developing 3D Machine Vision algorithms for Autonomous Driving and Electric Vehicles maintenance.

Honda Research Institute

San Jose, California, USA

RESEARCH ENGINEER

Sept 18-Oct 21

Worked on 3D detection using LiDAR, camera sensors and Joint 2D-3D Multi Object Tracking, action recognition, future trajectory forecast research topics. Sub-research topics include interaction modelling and important agent identification.

RESEARCH INTERN

Jan 18-Sept 18

Worked on 3D scene understanding research topics like 3D Mapping using LiDAR sensor and sensor fusion with GPS-IMU sensors

Carnegie Mellon University

Pittsburgh, Pennsylvania, USA

VISITING SCHOLAR, MACHINE LEARNING DEPARTMENT

May 17-Aug 17

Under the supervision of Katerina Fragkiadaki, worked on developing Ego-motion estimation for UAVs with low cost sensors (Monocular Camera, IMU) using Deep Learning Techniques. IMU sensor is used to overcome the problem of less or no visual correspondences during fast motion.

RESEARCH ASSOCIATE, FIELD ROBOTICS CENTER

Sept 15-April 16

Under the supervision of Sebastian Scherer, for the application of Industrial inspection with UAVs, I worked on system integration, control and real-time coverage planner to optimize flight time.

Publications

Social-STAGE: Spatio-Temporal Multi-Modal Future Trajectory Forecast

ICRA

INTERNATIONAL CONFERENCE ON ROBOTICS AND AUTOMATION

2021

[HTTPS://ARXIV.ORG/PDF/2011.04853.PDF](https://arxiv.org/pdf/2011.04853.pdf)

S Malla, B Dariush and C Choi

RAIN: Reinforced hybrid attention inference network for motion forecasting	ICCV
INTERNATIONAL CONFERENCE ON COMPUTER VISION	2021
HTTPS://ARXIV.ORG/PDF/2108.01316.PDF	
J Li, F Yang, H Ma, S Malla , M Tomizuka and C Choi	
LOKI: Long Term and Key Intentions for Trajectory Prediction	ICCV
INTERNATIONAL CONFERENCE ON COMPUTER VISION	2021
HTTPS://ARXIV.ORG/PDF/2108.08236.PDF	
H Girase*, H Gang*, S Malla , J Li, A Kanehara, K Mangalam, C Choi	
Shared Cross-Modal Trajectory Prediction for Autonomous Driving	CVPR "ORAL"
COMPUTER VISION AND PATTERN RECOGNITION	2021
HTTPS://ARXIV.ORG/PDF/2011.08436.PDF	
C Choi, J H Choi, J Li, S Malla	
Bird's Eye View Segmentation Using Lifted 2D Semantic Features	BMVC
BRITISH MACHINE VISION CONFERENCE	2021
HTTPS://WWW.BMVC2021-VIRTUALCONFERENCE.COM/ASSETS/PAPERS/0772.PDF	
I Dwivedi, S Malla , YT Chen, B Dariush	
DROGON: A Trajectory Prediction Model based on Intention-Conditioned Behavior Reasoning	CoRL
CONFERENCE ON ROBOT LEARNING	2020
HTTPS://ARXIV.ORG/PDF/1908.00024.PDF	
C Choi, S Malla , A Patil, J H Choi	
TITAN: Future Forecast using Action Priors	CVPR "ORAL"
COMPUTER VISION AND PATTERN RECOGNITION	2020
HTTPS://ARXIV.ORG/PDF/2003.13886.PDF	
S Malla , B Dariush and C Choi	
SSP: Single Shot Future Trajectory Prediction	IROS
INTERNATIONAL CONFERENCE ON INTELLIGENT ROBOTS AND SYSTEMS	2020
HTTPS://ARXIV.ORG/PDF/2004.05846.PDF	
I Dwivedi, S Malla , B Dariush, C Choi	
The H3D Dataset for Full-Surround 3D Multi-Object Detection and Tracking in Crowded Urban Scenes	ICRA
INTERNATIONAL CONFERENCE ON ROBOTICS AND AUTOMATION	2019
HTTPS://ARXIV.ORG/PDF/1903.01568.PDF	
A Patil, S Malla , H Gang, Y T Chen	
Development of an intelligent pressure measuring technique for bellows using radial basis function neural network	Elsevier
SENSORS AND ACTUATORS A: PHYSICAL	2016
HTTPS://WWW.SCIENCEDIRECT.COM/SCIENCE/ARTICLE/ABS/PII/S0924424715302697	
V Naveen, V Komanapalli, and S Malla	
Gesture Control Interface Using Machine Learning Algorithms	IJARCSE
IJARCSE VOLUME 5, ISSUE. 09 (2015) ISSN: 2277-128X.	2015
HTTPS://WWW.RESEARCHGATE.NET/PUBLICATION/291559092_GESTURE_CONTROL_INTERFACE_USING_MACHINE_LEARNING_	
ALGORITHMS	
H S Baweja, T Parhar, S Malla	
NEMO: Future Object Localization Using Noisy Ego Priors	ITSC
INTERNATIONAL CONFERENCE ON INTELLIGENT TRANSPORTATION SYSTEMS	2022
HTTPS://ARXIV.ORG/PDF/1909.08150.PDF	
S Malla , I Dwivedi, B Dariush, C Choi	

DRAMA: Joint Risk Localization and Captioning in Driving

ACCEPTED TO WINTER CONFERENCE ON APPLICATIONS OF COMPUTER VISION

WACV

2023

S Malla, C Choi, I Dwivedi, J H Choi and J Li

Papers under review

CLR-GAM: Contrastive Point Cloud Learning with Guided Augmentation and Feature Mapping

SUBMITTED TO INTERNATIONAL CONFERENCE ON LEARNING REPRESENTATIONS

S Malla, Y chen

Trajectory Prediction by Clustering Human Interactions at Multiple Scales

C Choi*, D Lee*, S Malla, S Bae, and J Kim

Patents

System and method for future forecasting using action priors

US PATENT APP. 16/913,260

Srikanth Malla, Chiho Choi, Behzad Dariush

ACCEPTED

2021

Systems and methods for providing future object localization

US PATENT APP. 16/828,343

Srikanth Malla, Chiho Choi

ACCEPTED

2021

Composite field based single shot prediction

US PATENT APP. 16/917,864

Isht Dwivedi, Chiho Choi, Srikanth Malla, Behzad Dariush

ACCEPTED

2021

SYSTEM AND METHOD FOR PROVIDING SOCIAL-STAGE SPATIO-TEMPORAL MULTI-MODAL FUTURE FORECASTING

US PATENT APP.17/160,747

Srikanth Malla, Chiho Choi, Behzad Dariush

ACCEPTED

2021

SYSTEM AND METHOD FOR COMPLETING TRAJECTORY PREDICTION FROM AGENT-AUGMENTED ENVIRONMENTS

US PATENT APP. 17/161,136

Chiho Choi, Srikanth Malla, Sangjae Bae

ACCEPTED

2021

System and method for completing Joint Risk Localization and Reasoning in Driving

US PATENT APP. 17/388,256

Srikanth Malla

FILED

2021

SYSTEM AND METHOD FOR PROVIDING LONG TERM AND KEY INTENTIONS FOR TRAJECTORY PREDICTION

US PATENT APP. 17/352,540

Harshayu Vishwajeet Girase, Haiming Gang, Srikanth Malla, Jiachen Li, Akira Kanehara, Chiho Choi

FILED

2021

System and method for automated extrinsic calibration of Lidars, Cameras, Radars, and Ultrasonic Sensors on Vehicles and Robots

PROVISIONAL FILED

Nikhil Naikal, Alexander Marques, Srikanth Malla

FILED

2021

Technical Skills

Programming Python, C++, Matlab

ML Frameworks PyTorch, TensorFlow, Keras

Vision Libraries PCL, OpenCV

Robotics Frameworks OpenRave, , Multisim, ROS, Solid Works, MoveIt, Gazebo, MuJoCo

Robots: Baxter, UAVs (custom built, DJI), Kuka Youbot, Turtle Bot

Others Linux, Docker, Vim, IPythonNotebook, Google Colab, Git, Github, AWS S3, AWS EC2, \LaTeX

Professional Service

2023	WACV , Winter Conference on Applications of Computer Vision	Reviewer
2022	SNSF , Swiss National Science Foundation, Grant	Reviewer
2022	ECCV , European Conference on Computer Vision	Reviewer
2022	CVPR , Computer Vision and Pattern Recognition	Reviewer
2022	RAL , Robotics and Automation Letters	Reviewer
2021	ICCV , International Conference on Computer Vision (MAIR2 Workshop)	Reviewer
2021-22	ICRA , International Conference on Robotics and Automation	Reviewer
2020	IROS , International Conference on Intelligent Robots and Systems	Reviewer
2020	IJRR , International Journal of Robotics Research	Reviewer
2020	T-IV , Transactions on Intelligent Vehicles	Reviewer

Teaching

Worcester Polytechnic Institute

Tutor

ELECTRICAL AND COMPUTER ENGINEERING DESIGN, ECE 2799

Spring 2017

In Spring 2017, I was the tutor for the course ECE 2799. Half of the course is project based and I supervised the electronics projects.

Teaching Assistant

SYNERGY OF HUMAN AND ROBOTIC SYSTEMS, RBE 595

Fall 2017

In Fall 2017 I was the Teaching Assistant for the course RBE 595, which is an advanced course designed for project-based robot design. I was part of grading the students assignments and tests. And help the students with questions in the class.

Honors and Awards

Ministry of Human Resource and Development, India

MERIT SCHOLARSHIP

2013, 2014

Study Abroad Scholarship, India

VIDESHI VIDYA DEVANA, ANDHRA PRADESH STATE SPONSORED SCHOLARSHIP

2017

Media Coverage

LOKI: An intention data set to train models for pedestrian and vehicle trajectory prediction

Tech Xplore

<https://techxplore.com/news/2021-09-loki-intention-dataset-pedestrian-vehicle.html>

September 9, 2021