

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, navigation, 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 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

Palo Alto, California, USA

RESEARCH ENGINEER

Oct 2021 -

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

Responsible for simulation, data creation, algorithm design, and deployment.

Honda Research Institute

San Jose, California, USA

RESEARCH ENGINEER

Jan 2018-Oct 2021

Worked on 3D scene understanding research topics like 3D Mapping using LiDAR sensor, sensor fusion with GPS-IMU sensors, 3D detection, joint 2D-3D multiobject tracking, action recognition, future trajectory forecast.

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.

Pittsburgh, Pennsylvania, USA

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	<i>ICCV</i>
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	<i>ICCV</i>
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	<i>CVPR "ORAL"</i>
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	<i>BMVC</i>
BRITISH MACHINE VISION CONFERENCE	2021
TO APPEAR	
I Dwivedi, S Malla , YT Chen, B Dariush	
DROGON: A Trajectory Prediction Model based on Intention-Conditioned Behavior Reasoning	<i>CoRL</i>
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	<i>CVPR "ORAL"</i>
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	<i>IROS</i>
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	<i>ICRA</i>
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	<i>Elsevier</i>
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	<i>IJARCSE</i>
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	<i>Arxiv</i>
	2019
HTTPS://ARXIV.ORG/PDF/1909.08150.PDF	
S Malla , I Dwivedi, B Dariush, C Choi	

Papers under review

DRAMA: Joint Risk Localization and Language Reasoning in Driving

CVPR

SUBMITTED FOR COMPUTER VISION AND PATTERN RECOGNITION

2022

[S Malla](#), J H Choi, C Choi, I Dwivedi, and J Li

Trajectory Prediction by Encoding Multi-Scale Human Interactions from Agent-Augmented Environment

CVPR

SUBMITTED FOR COMPUTER VISION AND PATTERN RECOGNITION

2022

C Choi*, D Lee*, [S Malla](#), S Bae, and J Kim

Patents

System and method for future forecasting using action priors

ACCEPTED

US PATENT APP. 16/913,260

2021

[Srikanth Malla](#), Chiho Choi, Behzad Dariush

Systems and methods for providing future object localization

ACCEPTED

US PATENT APP. 16/828,343

2021

[Srikanth Malla](#), Chiho Choi

Composite field based single shot prediction

ACCEPTED

US PATENT APP. 16/917,864

2021

Isht Dwivedi, Chiho Choi, [Srikanth Malla](#), Behzad Dariush

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

FILED

US PATENT APP. 17/388256

2021

[Srikanth Malla](#)

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

FILED

PROVISIONAL FILED

2021

Nikhil Naikal, Alexander Marques, [Srikanth Malla](#)

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

FILED

US PATENT APP. 17/160747

2021

[Srikanth Malla](#), Chiho Choi, Behzad Dariush

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

FILED

US PATENT APP. 17/161136

2021

Chiho Choi, [Srikanth Malla](#), Sangjae Bae

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

FILED

US PATENT APP. 17/352540

2021

Harshayu Vishwajeet Girase, Haiming Gang, [Srikanth Malla](#), Jiachen Li, Akira Kanehara, Chiho Choi

Technical Skills

Programming Python, C++, Matlab

ML Frameworks PyTorch, TensorFlow, Keras, CUDA

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, IPython Notebook, Google Colab, Git, Github, AWS S3, AWS EC2, \LaTeX

Editorial Service

2022	CVPR , Computer Vision and Pattern Recognition	<i>Reviewer</i>
2022	RAL , Robotics and Automation Letters	<i>Reviewer</i>
2021	ICCV , International Conference on Computer Vision (MAIR2 Workshop)	<i>Reviewer</i>
2021-22	ICRA , International Conference on Robotics and Automation	<i>Reviewer</i>
2020	IROS , International Conference on Intelligent Robots and Systems	<i>Reviewer</i>
2020	IJRR , International Journal of Robotics Research	<i>Reviewer</i>
2020	T-IV , Transactions on Intelligent Vehicles	<i>Reviewer</i>

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.