

Kiran Kumar Lekkala

University of Southern California

📞 +1(747)-229-8784 • ✉️ klekkala@usc.edu

Education

University of Southern California

PhD, Computer Science, GPA – 3.66/4.0

Advisor: Prof. Laurent Itti

Los Angeles, USA

May 2018 – Till Date

Indian Institute of Information Technology

BTech (Hons.), Computer Science and Engineering, GPA – 8.96/10

SriCity, India

August 2013 – May 2017

Interests

Areas: Robotics, Machine Vision, Deep Learning

Academic achievements

2018: USC Annenberg Fellowship award (2018-2022)

2017: Dean's List of Academic Excellence (Undergraduate)

2017: Dean's award for research contribution (Undergraduate)

2015: Secured 47th position in ACM-ICPC 2015 regional level contest

2014: Secured merit position in national level E-Yantra Robotics competition

Experience

2019: Graduate TA for CSCI 561 during Fall 2019

2018: ILab: Started my PhD under Prof. Laurent Itti

2017: Polymorphic Robotics Labrotory: Worked under Prof. Wei-Min Shen on Autonomous Navigation of Drones using Deep Learning.

2016: Google Summer of Code: Student developer at [Beagleboard.org](https://beagleboard.org).

2016: Research Intern at Nanyang Technological University, Singapore: Worked on a project for enabling semi-autonomous navigation for crane lifting.

2016: Intern at Geoscience Consulting, Singapore: Worked with a research group from Technical University of Munich, in generating 3D point-cloud of outdoor environments using an Earthmine system (Omnidirectional stereo camera system) using Semi-Global Matching.

2014–2017: Teaching assistant Teaching assistant for Computer System Organization, Embedded and Intelligent Systems, Computer and Communication Networks.

Publications

2020: Shaped Policy search in Evolutionary strategies using Expert state sequences submitted to [ICRA 2021](#)

2020: Attentive Feature Reuse for Multi Task Meta learning [[Arxiv](#)]

2019: Meta adaptation using Importance weighted Demonstrations [[Arxiv](#)]

2016: Simultaneous Aerial Vehicle Localization and Human Tracking published [TENCON 2016](#)

2016: Intelligent Person following Quadcopter accepted in [ICCE 2017](#)

2016: Accurate and Augmented Navigation for Quadcopter based on Multi-Sensor Fusion published in [INDICON 2016](#)

Notable projects

Beobot 3.0: Built a mobile robot from scratch as a hardware platform for Autonomous Visual Navigation equipped with [JeVois](#) camera and a robot arm which were developed in our lab. [[Dropbox](#)]

BeoGym: Built OpenAI-gym based middleware for 2 popular simulators: CARLA and Gazebo to enable RL algorithms to parallelize and scale to a cluster of machines. Also consists of a simulated model of Beobot 3.0.

MultiMeta Dataset: Developed a Meta dataset which consists of datasets corresponding to multiple tasks like Place recognition, Depth, Surface normal estimation, Vanishing-point detection and Semantic segmentation. This dataset was developed to evaluate generalization abilities of methods to adapt to unseen, dynamic environments. [[link](#)]

Accurate and Augmented Localization and Mapping for Quadcopters: Designed and constructed a Quadcopter as part of Undergraduate Hons. project. Developed a fullstack robotic system comprising of modules like EKF based pose-tracker, Scene flow using PD-flow, Depth based LSD-SLAM, IBVS, Obstacle avoidance using potential fields etc. Extended the CV library to use the NEON accelerations, OpenGL ES2 shaders and PRU (Programmable Real-time Units) on [Beaglebone black](#). [[github](#)]

API Support for Beaglebone Blue: Created easy-to-use APIs and firmware for Beaglebone Blue as part of [Google Summer of Code 2016](#). This project was a collaboration of [Beagleboard.org](#) with the University of California, San Diego. [[github](#)]

Relevant Coursework

Graduate coursework: CSCI 561: Foundations of Artificial Intelligence, CSCI 545: Robotics, CSCI 585: Database Systems, CSCI 699: Advanced topics in Statistical Machine learning, CSCI 699: Computational Human Robotic Interaction, CSCI 699: Representation Learning

Undergraduate coursework: Autonomous Navigation for Mobile Robots, Visual Navigation for Flying Robots, Digital Image Processing, Introduction to Computer Vision, Introduction to Artificial Intelligence and Machine Learning, Control of Mobile Robots, Embedded and Intelligent System

Technical Skills

Programming/Scripting Languages: C, C++, C#, Python, UNIX Bash, JavaScript, Ruby

Vision/Graphics: Matlab, Simulink, OpenCV, Unreal Engine, WebGL, PCL, CUDA, OpenGL

Robotic and Embedded Environment: ROS, MRPT, PSoC, Beaglebone Black, ARM Boards

Web Development: HTML5, Ruby on Rails, MySQL, CSS, PHP, JSP

Cloud Technologies and IoT: Hadoop, Juju Charms, RTOS, Snappy Ubuntu, 6LoWPAN

Other Activities

Supervised Alan Chang (Undergraduate at USC, Batch 2021) for Spring and Fall 2019