Karnik Ram

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github:/karnikram

Interests

Computer Vision, Mobile Robotics, Aerial Robotics

Education

International Institute of Information Technology, Hyderabad, India (IIIT-H) 2018 - 2020
M.S. by Research in Computer Science & Engineering
Advisor: Dr. K. Madhava Krishna
Cumulative Grade Point Average: 9.50/10

Sri Sivasubramaniya Nadar College of Engineering, Chennai, India (SSN) 2013 - 2017
B.Eng. in Electronics & Communication Engineering (ECE) from **Anna University**, Chennai
Cumulative Grade Point Average: 7.20/10

Experience

Mobile Robot Programming Toolkit Summer 2018
Google Summer of Code Student Developer
Developed a GUI app for the extrinsic calibration of range and visual sensors.

International Institute of Information Technology, Hyderabad, India May 2017 - April 2018
Research Intern in the Robotics Research Center
Worked on markerless LiDAR-camera extrinsic calibration for an autonomous car.

Navstik Autonomous Systems, Pune, India Summer 2016
Computer Vision Intern
Developed and evaluated GPU-accelerated person tracking applications for a drone.

Publications

INFER: Intermediate Representations for Future Prediction
Shashank Srikanth, Junaid Ahmed Ansari, R. Karnik Ram, Sarthak Sharma, J. Krishna Murthy, K. Madhava Krishna
In proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems, 2019

CalibNet: Geometrically-Supervised LiDAR - Camera Extrinsic Calibration using 3D Spatial Transformer Networks
Ganesh Iyer, R. Karnik Ram, J. Krishna Murthy, K. Madhava Krishna
In proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems, 2018

Selected Projects

Dense Visual Odometry using an RGB-D Camera Fall 2017
Implemented a pipeline to estimate camera motion using non-linear photometric error minimization.

Automated Stock Counting using a Quadcopter Spring 2017
Developed optic flow odometry and stock counting modules for a warehouse quadcopter.

Low-Cost Flight Controller for a Quadcopter Fall 2015
Developed an 8-bit flight controller for a quadcopter using an ATmega328 and a 3-axis gyro.

Relevant Coursework

Graduate: Computer Vision, Machine Learning, Mobile Robotics, Topics in Applied Optimization, Topics in Optimization on Manifolds
Undergraduate: Robotics & Automation, Digital Image Processing, OOP & Data Structures, Computer Architecture, Probability & Random Processes, Embedded & Real Time Systems

Awards & Grants

- **Best Senior Year Project**, ECE Department, SSN 2017
- **SSN Trust Funding for Student Projects** 2014, 2015

Student Activities

- Conceived, developed, and maintained **The SSN App** - the official mobile app of SSN. 2014 - 2017
- **Event Coordinator**, SSN-ECE Tech Club 2016 - 2017

Technical Skills

Tools & Libraries: OpenCV, ROS, PCL, Matlab, Git | Familiar: Qt, Android, Eage EDA, LaTeX
Programming Languages: C/C++, Python | Familiar: Java