Sumanth Reddy Cherupally

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Education

University of California, San Diego | Masters in Robotics - ECE | GPA:3.67/4.0 **Sept 2021 - July 2023**
Indian Institute of Technology Hyderabad | B.Tech in Electrical Engineering | GPA:8.67/10.0 **May 2021**
Coursework: Sensing and Estimation in Robotics, Computer Vision II, Statistical Learning I, Probabilistic Learning, Graphical Models, Deep Learning, Representational Learning, Operating Systems, Computer Networks.

Research Experience

Existential Robotics Lab, UCSD | Prof. Nikolay Atanasov, ECE Jan 2022 – Present
- Working on Multi-agent SLAM algorithm using Distributed Gaussian Process Mapping and ICP.
- Implementing the system in C++ using ROS and Octree based data structure.

Lab for Video and Image Analysis, IITH | Prof. Sumohana S. Channappayya, EE Aug 2020 – May 2020
- Developed an end to end Deep Learning algorithm to detect and flag occlusions in monocular traffic camera images.
- Reviewed literature in the areas of Semantic segmentation, Depth estimation and Object Detection models and datasets. Also reviewed previous classical techniques related to this problem.

Pranet Lab, IITH | Prof. Kotaro Kataoka, CSE May 2019 – April 2021
Scalable and light DAG based blockchain for maintaining IoT Data Integrity
- Designed and implemented a novel blockchain protocol keeping in mind scalability, throughput and the resource constraints for the IoT devices. Implemented our LSDI system from scratch in Golang, from the level of writing protocols for communication using TCP sockets to high level user API.
  Repositories: github.com/sumanthcherupally/LSDI_GW, github.com/sumanthcherupally/LSDI_SN
- First author for the paper published at ICOIN 2021 conference. Represented IIT Hyderabad at CEATEC 2019 exhibition in Japan demonstrating our system on a live network of Raspberry Pis.
- Collaborated with a final year PhD student to extend our previous work on DAG based distributed ledger toaddress the issue of route verification in the BGP protocol.
- Co-authored a submission to Journal of Network and Systems Management named Inter-domain prefix and route validation using fast and scalable DAG based distributed ledger for secure BGP routing.

Publications

S. R. Cherupally, S. Boga, P. Podili and K. Kataoka, "Lightweight and Scalable DAG based distributed ledger for verifying IoT data integrity," 2021 International Conference on Information Networking (ICOIN), 2021.

Skills

Programming: Python, C++, Golang (intermediate).
Frameworks: PyTorch, Tensorflow, ROS, MATLAB.
Related/Interested work areas: Robotics, Deep Learning, Computer Vision, Software Development.

Key Projects

Remote battery monitoring system
- Part of an initial stage startup team, ideated and implemented a battery monitoring system for solar battery powered street lights. Worked on the architecture of micro-controllers and protocols for communication in a distributed mesh network. Link to product brochure - https://bit.ly/3oamHnN
- Provided a cost effective system for remotely monitoring the battery status of all the street lights.

Work Experience

BNY Mellon Technology | SDE Intern | Remote May 2020 – July 2020
- Joined as a summer intern in a team working to migrate an existing internal dashboard from Adobe flash to Angular.
- Worked on Highcharts library to rewrite the visualization widgets from the previous dashboard.
- Remodelled the dataflow into the frontend of the dashboard.