Siddharth Agrawal

Robotics Institute, CMU

Email: siddhara@andrew.cmu.edu

Linkedin

Education

- **Carnegie Mellon University** — Pittsburgh, PA
  Masters in Robotics; GPA: 3.83/4.0 — *August 2019 – Present*
- **Indian Institute of Technology Delhi** — New Delhi, India
  Bachelor of Technology in Mechanical Engineering; GPA: 7.60/10 — *July 2014 – October 2018*

Experience

- **AART Lab, Robotics Institute, CMU** — Pittsburgh, Pennsylvania
  *Graduate Research Assistant under **Dr. Katia Sycara*** — *August 2019 - Current*
  - Working on Multi-Agent Learning. Formulated and tested a LSTM based method to create policy representation of human players to be used for online policy adaptation of agents in human-agent teaming.
- **Intelligent Motion Lab, Duke University** — Durham, North Carolina
  *Visiting Research Scholar under **Dr. Kris Hauser*** — *January 2019 - July 2019*
  - Worked on Feasible Motion Learning From Demonstrations. Designed an Incremental PRM Planner that used a novel cost function based on UCB to adapt learnt Motion Primitives in diverse workspaces.
- **UMass Lowell Robotics Lab, Dept. of Computer Science** — Lowell, Massachusetts
  *Summer Intern under **Dr. Holly Yanco*** — *June 2017 - July 2017*
  - Designed feedback strategies to evaluate their effect on real-time trust and control allocation strategy of a human operator in shared autonomy scenarios such as autonomous cars, autopilot systems.
- **Innovation and Enterprise Lab, University of Technology Sydney** — Sydney, Australia
  *Visiting Research Student under **Dr. Mary-Anne Williams*** — *July 2016 - December 2016*
  - Designed and implemented robot behaviors for an autonomous security robot using ROS on a **PR2** robot. Conducted user studies for evaluating the factors which affect human obedience to robots.

Publications

- **Addressing reward bias in GAIL with neutral rewards**, in Deep Reinforcement Learning Workshop NeurIPS 2020, Jena, S.Agrawal, Sycara
- **Adaptive Agent Architecture for Real-Time Human-Agent Teaming**, in Planning, Activity and Intent Recognition Workshop AAAI' 21, S.Agrawal*, Ni*, Li*, Raja, Gui, Hughues, Jia, Lewis, Sycara
- **Would you obey an Aggressive Robot: A Human-Robot Interaction Field Study**, S.Agrawal*, M.A Williams in the 27th IEEE International Symposium on Robot and Human Interactive Communication.
- **Feedback Methods in HRI: Studying their effect on Real-Time Trust and Operator Workload**, 13th ACM/IEEE International Conference on Human-Robot Interaction, 2018, S.Agrawal*, H.Yanco.

Other Graduate Projects

- **Learning Representations using Adversarial Training for Genre Transfer**: Formulated and tested an autoencoder based method to learn disentangled representations for doing music genre transfer.
- **Addressing Reward Bias in GAIL**: Formulated a novel reward function to solve reward bias in Adversarial Imitation Learning and achieved higher performance over existing methods.
- **Outlier Filtering for Deep Point Cloud Registration**: Designed a method to filter outliers for PCR.

Skills and Coursework

- **Languages and Frameworks**: Python, Java, Matlab, R, Shell, ROS, Keras, Tensorflow, PyTorch
- **Coursework**: Computer Vision, Machine Learning, Convex Optimisation, SLAM, Reinforcement Learning