Priyam Parashar

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Contextual Robotics Institute
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AREAS OF INTEREST

Probabilistic Decision Making • Human-Robot Interaction • Metareasoning • Knowledge-based Systems

EDUCATION

2016-Present PH.D. STUDENT in Computer Science,
University of California, San Diego

2015-2016 PH.D. STUDENT in Robotics,
Georgia Institute of Technology
CGPA: 3.50 / 4.00

2015 M.Sc. in Robotics,
Carnegie Mellon University
CGPA: 3.90 / 4.00

2013 B.TECH. in Electronics and Communication,
International Institute of Information Technology, Hyderabad
CGPA: 8.55 / 10.00

RESEARCH EXPERIENCE

2016-Present GRADUATE RESEARCH ASSISTANT
Advised by: Dr. Henrik I. Christensen and Dr. Ashok K. Goel,
University of California, San Diego, Georgia Institute of Technology

- Implementing a collaborative decision-making framework which can:
  - Learn task models from human demonstrations
  - Simulate, experiment and refine models on a Digital Twin
  - Use learned models to refine subsequent learning
  - Use human provided rewards to better collaborate with humans in future repetitions or adaptations of tasks
- Current Problem Domain: An agent which can build 2D and 3D shapes from Mega Bloks™

- *Research questions of interest*: Learning from demonstration, Digital Twins for experimentation, Task planning, Meta-reasoning for hybrid learning

2013-2014 Graduate Research Assistant
Advised by: Dr. Reid Simmons,
Carnegie Mellon University
- Implemented a travel-time prediction system from years of logged data from CoBot
- Authored a paper outlining the approach and results
- *Research questions of interest*: Task modelling, data-driven prediction

2013 Undergraduate Research Assistant
Advised by: Dr. Madhava Krishna
IIIT-Hyderabad
- Programmed FPGA-based omnibots to test parallel path-planning algorithms

WORK EXPERIENCE

Summer 2017 Research Intern
Supervised by: Dr. Akansel Cosgun, Dr. Alireza Nakhaei
Honda Research Institute, USA, Inc.
- Developed a learning-from-demonstration pipeline to analyze and model human driving patterns collected via simulation
- Implemented a driving simulator, a keyframe-based demonstration model and spline-based trajectory generator
- Authored a workshop paper outlining the approach and results

2014 Robotics Software Intern
Supervised by: Dr. Frederik Heger,
Vecna Technologies, Inc.
- Programmed the pipeline conceived during the GRA at CMU for QC Bot in C++
- Experimented and improved efficiency with more robot-specific features

PUBLICATIONS

Journal *Parashar, P., Goel, A. K., Sheneman, B. and Christensen, H.* 2018. Towards life-long adaptive agents: a hybrid planning paradigm for combining domain knowledge with reinforcement learning. Special issue on adaptive and learning agents 2017, The Knowledge Engineering Review, Vol 33

Conference *Parashar, Priyam, Robert Fisher, Reid G. Simmons, Manuela M. Veloso, and Joydeep Biswas.* "Learning Context-Based Outcomes for Mobile Robots in Unstructured Indoor Environments." In ICMLA, pp. 703-706. 2015

Book Chapter *P. Parashar, B. Sheneman, and A. K. Goel*, "Adaptive Agents in Minecraft: A Hybrid Paradigm for Combining Domain Knowledge with Reinforcement Learning," in Autonomous Agents and Multiagent Systems, G. Sukthankar and J. A. Rodriguez-Aguilar, Eds. Cham: Springer International Publishing, 2017, pp. 86–100