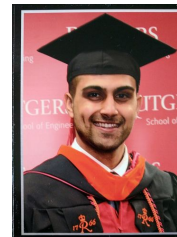


CURRICULUM VITAE – ROHAN R PALEJA

PERSONAL INFORMATION

Rohan Paleja
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PROFESSIONAL OBJECTIVE

Improve the ability for machines to understand humans and humans to understand machines. I focus on developing techniques and algorithms that can improve the compatibility of humans and machines, and help bring efficient and high-performing human-robot collaboration to fruition.

EDUCATION

Ph.D. Georgia Institute of Technology, Atlanta GA. in Robotics. 2018 – Present.
Research Title : *Interpretable Artificial Intelligence for Personalized Human-Robot Collaboration.*
More details at www.rohanpaleja.com
M.Sc. Rutgers University, New Brunswick NJ. in Mechanical Engineering. 2017 – 2018.
Thesis title : *Viability and Performance of Indoor Mapping Using the Velodyne VLP-16 LiDAR.*
B.Sc. Rutgers University, New Brunswick NJ. in Mechanical Engineering. 2014 – 2017.
Magna Cum Laude.

PUBLICATIONS

Conference Proceedings -

- Paleja*, R., Niu*, Y., Silva, A., Ritchie, C., Choi, S., and Gombolay, M. (2022) "Learning Interpretable, High-Performing Policies for Autonomous Driving" In Proceedings of the Robotics : Science and Systems Conference (RSS). [**32% Acceptance Rate**]
- Seraj*, E., Wang*, Z., Paleja*, R., Martin, D., Sklar, M., Patel, A., and Gombolay, M. (2022) "Learning Efficient Diverse Communication for Cooperative Heterogeneous Teaming" In Proceedings of the Conference on Autonomous Agents and Multiagent Systems (AAMAS). [**26% Acceptance Rate**]
- Paleja, R., Ghuy, M., Ranawaka, N., and Gombolay, M. (2021) "The Utility of Explainable AI in Ad Hoc Human-Machine Teaming" In Proceedings of the Conference on Neural Information Processing Systems (NeurIPS). [**26% Acceptance Rate**]
- Dias, D., Zenati, M., Srey, R., Arney, D., Chen, L., Paleja, R., Kennedy-Metz, L., and Gombolay, M.. (2021) "Using Machine Learning to Predict Perfusionists' Critical Decision-Making during Cardiac Surgery." In Computer Methods in Biomechanics and Biomedical Engineering.
- Paleja, R., Silva, A., Chen, L., and Gombolay, M. (2020) "Interpretable and Personalized Apprenticeship Scheduling : Learning Interpretable Scheduling Policies from Heterogeneous User Demonstrations." In Proceedings of the Conference on Neural Information Processing Systems (NeurIPS). [**20% Acceptance Rate**]
- *Niu, Y., *Paleja, R., and Gombolay, M. (2021) "Multi-Agent Reinforcement Learning with Graph-Attention Communication." In Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS). [**25% Acceptance Rate**]
- Chen, L., Paleja, R., Ghuy, L., and Gombolay, M. (2020) "Joint Goal and Strategy Inference across Heterogeneous Demonstrators via Reward Network Distillation." In Proceedings of the Conference of Human-Robot Interaction (HRI). [**24% Acceptance Rate**]
- Chen, L., Paleja, R., and Gombolay, M.. (2020) "Learning from Suboptimal Demonstration via Self-Supervised Reward Regression." In Proceedings of the Conference on Robot Learning (CoRL). [**Best Paper Finalist**] [**Plenary Talk**][**34% Acceptance Rate**]
- Schrum, M., Neville, G., Johnson, M., Moorman, N., Paleja, R., Feigh, K., and Gombolay, M. (2020) "Effects of Social Factors and Team Dynamics on Adoption of Collaborative Robot Autonomy." In Proceedings of the Conference of Human-Robot Interaction (HRI).

Workshop Papers and Doctoral Consortia -

- Pimentel, L.*, Paleja, R.*, Wang, Z., Seraj, E., Pagan, J., and Gombolay, M. (2022). "Scaling Multi-Agent Reinforcement Learning via State Upsampling." In Proceedings of the Robotics Science and Systems Workshop on Scaling Robot Learning (RSS22-SRL).
- Paleja, R., and Gombolay, M. (2022). "Mutual Understanding in Human-Machine Teaming." In Proceedings of the Association for the Advancement of Artificial Intelligence Conference (AAAI) Doctoral Consortium.
- *Niu, Y., *Paleja, R., and Gombolay, M. (2021) "Multi-Agent Graph-Attention Communication and Teaming." In Proceedings of the ICCV 2021 Workshop on Multi-Agent Interaction and Relational Reasoning. **[[Spotlight Talk] [Best Paper Award]**
- Chen, L., Paleja, R., and Gombolay, M.. (2021) "Towards Sample-efficient Apprenticeship Learning from Suboptimal Demonstration." In Proceedings of Artificial Intelligence for Human-Robot Interaction (AI-HRI), AAAI Fall Symposium Series.
- Paleja, R., Silva, A., Chen, L., and Gombolay, M. (2021) "Interpretable and Personalized Apprenticeship Scheduling : Learning Interpretable Scheduling Policies from Heterogeneous User Demonstrations." In Proceedings of the AAMAS Autonomous Robots and Multirobot Systems (ARMS) Workshop.
- Paleja, R., and Gombolay, M. (2020) "Heterogeneous Learning from Demonstration." In Proceedings of the Conference of Human-Robot Interaction (HRI) Pioneers Workshop. **[32% Acceptance Rate]**

Thesis -

- Paleja, R., and Diez, J. (2020) "Viability and Performance of Indoor Mapping using the Velodyne VLP-16 LiDAR." *M.Sc. Thesis*, Rutgers University.

INDUSTRY
EXPERIENCE

Summer Research Intern. Advanced Concepts and Technologies Group, MIT Lincoln Laboratory Summer 2019.

RESEARCH
EXPERIENCE

Research Assistant in the Cognitive Optimization and Relational (CORE) Robotics Lab

- Learning from Multi-Modal Behaviors
 - Developed algorithms for learning from heterogeneous demonstrators, setting in a new state-of-the-art in imitation learning.
 - Modeled the reward functions across demonstrators, teasing out strategy-specific criteria to produce a new state-of-the-art in heterogeneous inverse reinforcement learning.
- Human-Robot Collaborative Coadaptation
 - Investigating how we can program AI behavior to induce a Nash equilibrium in collaborative tasks.
 - Developed a collaborative teaming environment in Minecraft as an interactive testbed to study human behavior as they work alongside an autonomous agent.
- Multi-Agent Reinforcement Learning
 - Developed Multi-Agent Graph-attention Communication (MAGIC), a graph-attention communication protocol in which we learn 1) a Scheduler to help with the problems of when to communicate and whom to address messages to, and 2) a Message Processor using Graph Attention Networks (GATs) with dynamic graphs to deal with communication signals.

Research Assistant in the Applied Fluids Laboratory

- SLAM Modeling Using the Velodyne LiDAR
 - Developed a system to that can simultaneously avoid obstacles, localize, and map using the Velodyne VLP-16, a GPS, and an IMU

Undergraduate Capstone Project

- Autonomous Lawn-care Vehicle
 - Create an Autonomous Lawn-care Vehicle that uses 3D Vision and Machine Learning for Object Detection and Weed Extermination

TEACHING
EXPERIENCE

Teaching Assistantship

- Robot Intelligence : Planning (CS 7469-A) – Graduate Section, School of Interactive Computing (IC), Georgia Institute of Technology (Fall 2020) | Supervisor : Prof. Matthew C. Gombolay

- Robot Intelligence : Planning (CS 4649-A) – Undergraduate Section, School of Interactive Computing (IC), Georgia Institute of Technology (Fall 2020) | Supervisor : Prof. Matthew C. Gombolay
- Dynamics of Rigid Bodies (ME 2202), School of Mechanical Engineering (ME), Georgia Institute of Technology (Summer 2020) | Supervisor : Prof. Nader Sadegh
- Alternative Energy Systems (ME 474), School of Mechanical Engineering (ME), Rutgers University (Fall 2017) | Supervisor : Prof. Sara Moghtadernejad
- Aerospace Propulsion (ME 459), School of Mechanical Engineering (ME), Rutgers University (Spring 2018) | Supervisor : Prof. Doyle Knight

Advising & Mentorship

- Yaru Niu, M.Sc. Student in the School of Electrical & Computer Engineering at the Georgia Institute of Technology
 - Developed Multi-Agent Graph-attention Communication (MAGIC), a graph-attention communication protocol
- Sergey Savelyev
 - Developed a Recon-Blind Multi Chess agent based on AlphaZero
 - Thesis : Mastering Reconnaissance Blind Chess with Reinforcement Learning

SKILLS

Operating Systems : Windows, Unix and Linux.

Programming Languages : Python, C++, L^AT_EX, Java, HTML.

Noted Libraries : PyTorch, TensorFlow, DGL, Pygame

Scientific Softwares Maple, Matlab, Simulink, Mathematica, LabVIEW, Unreal Engine, ROS.

Languages : English, Spanish.

AWARDS

Technology Ventures Award, Rutgers University, 2016

James J. Slade Research Scholar Award, Rutgers University, 2016

General Engineering Scholarship, Rutgers University, 2015

PROFESSIONAL CERTIFICATIONS

Udacity Robotics Nanodegree, 2017-2018. [Credential URL](#).

LEADERSHIP & ACADEMIC SERVICE

Sponsorship Chair, Human-Robot Interaction (HRI) 2020 Pioneers Workshop, Cambridge United Kingdom.

Technical Manuscript Reviewer for,

- International Conference on Human-Robot Interaction (HRI)
- International Conference on Robot & Human Interactive Communication (ROMAN)
- International Conference on Neural Information Processing Systems

MEMBERSHIPS

IEEE Student Member

RoboGrads, Robotics Graduate Student Organization

Pi Tau, Mechanical Engineering Honor Society

American Society of Mechanical Engineers

REFERENCES

References can be provided upon request