

Sahit Chintalapudi

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Education

Massachusetts Institute of Technology

2nd year Ph. D Student, Artificial Intelligence and Decision Making
Advised by Dr. Leslie Pack Kaelbling and Dr. Tomas Lozano-Perez

Boston

2020–Present

Georgia Institute of Technology

B.S Computer Science, GPA: 3.94
Concentrations in Intelligence and Theory

Atlanta

2016–2019

Publications

- [1] Keshav Kolur*, Sahit Chintalapudi*, Byron Boots, and Mustafa Mukadam. Online motion planning over multiple homotopy classes with gaussian process inference. *Proceedings of the International Conference on Intelligent Robots and Systems (IROS)*, 2019.
- [2] Vinitha Ranganeni, Sahit Chintalapudi, Oren Salzman, and Maxim Likhachev. Effective footstep planning using homotopy-class guidance. *Artificial Intelligence*, 286:103346, 2020.

Research Experience

DeepMind

Research Engineering Intern

London

March 2020–August 2020

- o Experimented with curricula generation methods for RL agents in the context of autonomous stacking.
- o Developed internal infrastructure for collecting human demonstrations of manipulation in simulated environments.

Georgia Institute of Technology: Robot Learning Lab

Undergraduate Research Assistant, advised by Dr. Byron Boots

Atlanta

2017–2019

- o Used C++, MATLAB, and the GTSAM toolbox to model the planning problem with a factor graph that adapted in real time to environment changes. In an environment with randomly moving obstacles, this algorithm reduced collision intensity by at least 37% compared to other approaches.
- o Extending existing implementations of Model Predictive Control algorithms to run on the AutoRally platform and log data for Value Function Approximation.

University of Washington: Human-Centered Robotics Lab

Undergraduate Research Assistant, advised by Dr. Maya Cakmak

Seattle

May 2019–Aug 2019

- o Implemented a Jacobian-Based Full-Body Controller for the Fetch Robot to perform research on mobile manipulation with ROS and C++.
- o Researched Task Decomposition to facilitate high dimensional planning in the context of autonomous cleaning.

Carnegie Mellon University: Searched Based Planning Lab

Robotics Institute Summer Scholar, advised by Dr. Maxim Likhachev

Pittsburgh

June 2018–Aug 2018

- o Developed C++ Software for a humanoid footstep planner which plans 16-128 times faster than the baseline approach in environments with many obstacles

Skills

Languages: Python, C++, MATLAB, Java

Tools: ROS, Tensorflow, PyTorch, NumPy, Linux, L^AT_EX, Eigen, GTSAM

Awards

2019 President's Undergraduate Research Award: Georgia Tech Grant

1st Place: Google Tech Challenge 2019

Best Collegiate Speed Demons Team: Sparkfun Autonomous Vehicle Competition 2018

1st Place Autonomous Car Wars: Sparkfun Autonomous Vehicle Competition 2017

3rd Place: International Autonomous Robot Racing Competition 2017

Hack Harrassment Award: SwampHacks 2017

Projects

MeleeML

Interactive Robot Learning Final Project

Fall 2019

- o Trained a Generative Adversarial Imitation Learning (GAIL) agent to learn how to play Super Smash Brothers Melee (SSBM) from Human Demonstration using PyTorch
- o Designed and implemented an advantage actor-critic model to play SSBM by training against CPUs

The Agency: Undergraduate Machine Learning Club

Internal Operations Manager

2018–2019

- o Gave weekly lectures on Machine Learning topics not covered in the undergraduate ML curriculum.
- o Topics include: GANs, Deep Reinforcement Learning, Kernel Methods
- o Lead a project team on building an autonomous parade float for Georgia Tech's homecoming parade

RoboRacing: Autonomous RC Vehicles

Software Lead

2016–2018

- o Prototyped different deep network architectures in Keras for end to end learning of steering autonomous vehicles from images of the road.
- o Managed a team of seven other developers, using GitHub issues to track team progress and coordinating with mechanical and electrical team leads
- o Developed the plant PID controller on an Arduino

Relevant Coursework

MIT: Algorithms for Inference, Underactuated Robotics, Optimization Methods, Machine Learning

Georgia Tech: Interactive Robot Learning (Graduate Course), Computer Vision, Honors Probability and Statistics, Robotics and Perception, Machine Learning

Service

Robotics and Automation Letters (RA-L) 2021: Reviewer

Graduate Application Assistance Program Mentor 2020-2021: Mentored 4 students, providing feedback and advice on graduate school applications over the course of a semester

Robotics, Science and Systems (RSS) 2017: Student Volunteer