

# Sahit Chintalapudi

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Looking for an internship or research experience developing intelligent robots.

## EDUCATION

### GEORGIA INSTITUTE OF TECHNOLOGY

#### BS IN COMPUTER SCIENCE

Expected May 2020 | Atlanta, GA

Concentrations in Theory and Intelligence

GPA: 3.93 / 4.0

## SKILLS

#### Programming Languages:

Python, C++, Java

#### Tools:

Linux, ROS (Robot Operating System),

Vim, Protobuf, MATLAB,  $\LaTeX$

## COURSEWORK

Machine Learning

Computer Vision

Second Course in Linear Algebra

Honors Design and Analysis of Algorithms

Honors Probability and Statistics

Introduction to Artificial Intelligence

Robotics and Perception

## AWARDS

President's Undergraduate Research

Award - Grant Awarded

Google Tech Challenge 2019 - 1st Place

Sparkfun Autonomous Vehicle

Competition 2018 -

Best Collegiate Speed Demos Team

Google Games 2018-3rd Place

Sparkfun Autonomous Vehicle

Competition 2017 -

Autonomous Car Wars Winner

International Autonomous Robot Racing

Competition 2017 - 3rd Place

Swamphacks 2017-Best use of ClarifAI

Swamphacks

2017-HackHarassment Award

## LINKS

GitHub: [github.com/chsahit](https://github.com/chsahit)

LinkedIn:

[linkedin.com/in/sahit-chintalapudi](https://www.linkedin.com/in/sahit-chintalapudi)

## RESEARCH

### ROBOT LEARNING LAB | UNDERGRADUATE RESEARCHER

April 2017 – Present | Georgia Tech, GA

- K. Kolar\*, **S. Chintalapudi**\*, M. Mukadam, B. Boots, Online Motion Planning Over Multiple Homotopy Classes with Gaussian Process Inference, IROS. 2019
- 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.
- Testing the performance of various Model Predictive Control algorithms and implementing ROS nodes to allow them to run on the AutoRally Platform

### HUMAN-CENTERED ROBOTICS LAB | RESEARCH ASSISTANT II

May 2019 - Present | University of Washington, WA

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

### SEARCH BASED PLANNING LAB | RI SUMMER SCHOLAR

June 2018 - August 2018 | Carnegie Mellon University, PA

- V. Ranganeni, **S. Chintalapudi**, O. Salzman, M. Likhachev, Effective Footstep Planning Using Homotopy-Class Guidance, (Under Review) Artificial Intelligence (AIJ). 2019.
- Developed C++ Software for a humanoid footstep planner which plans 16-128 times faster than the baseline approach in environments with many obstacles

### HUMAN-AUTOMATION SYSTEMS LAB | RESEARCHER

January 2017 – May 2017 | Georgia Tech, GA

- Choreographed a telepresence robot to be more expressive by modifying the motion profiles that controlled the robot with Java

## PROJECTS

### ROBORACING: AUTONOMOUS RC CARS | SOFTWARE LEAD

September 2016 – October 2018

- Prototyped different deep network architectures in Keras for end to end learning of steering autonomous vehicles from images of the road.
- Managed a team of seven other developers, using GitHub issues to track team progress and coordinating with mechanical and electrical team leads
- Trained an SVM that detects the road in an image with OpenCV and Python
- Developed the PID controller which acted as an interface between the hardware and the racing AI on an Arduino
- Used the OpenCV Circle Hough Transform to identify the race start signal

### BUZZMOBILE - AUTONOMOUS PARADE FLOAT | PROJECT LEAD

January 2017 – April 2018

- Integrated Gazebo, a robot simulator, with ROS so we could test in simulation using nodes written in C++
- Prepared Live Coding Demonstrations to illustrate the usage of ROS's Python bindings for new team members
- Added Arduino firmware to engage and disengage brakes as well as read incoming commands over the serial line