

# VICTOR ALADELE

valad@gatech.edu

1071A Terrell St. NW ◊ Atlanta, GA 30318

(301)-379-5241

## EDUCATION

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### Georgia Institute of Technology

PhD in Electrical Engineering

Research Focus in *Control systems, Machine learning and Robotics*

**Atlanta GA**

*Aug 2016 - Present*

### New Jersey Institute of Technology

B.S. in Electrical Engineering

Minor in Applied Mathematics

Overall GPA: 3.76 (Magna Cum Laude)

**Newark NJ**

*May 2016*

## TECHNICAL STRENGTHS

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### Computer Languages

C++, Python, Java

### Scripting Languages

HTML, CSS, MATLAB

### Tools

Robot Operating System (ROS), Git, Excel, Autodesk Inventor

## RELEVANT COURSES

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Linear Systems

Nonlinear Systems

Optimal Control

Machine Learning

Stochastic Systems

Mobile Manipulation

Introduction to Robotics Research

## PROJECTS

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### Control of a 3 DOF Wheeled Inverted Pendulum (WIP)

*September 2018 - Present*

*Working in Simulation*

- Working with Python, Matlab and C++ on Linux platforms.
- Working with a model of the WIP in a Dynamic Animation and Robotics Toolkit (DART) simulation software.
- Using a Linear Quadratic Controller to control the WIP.

### Control of a 7 DOF Robotic Manipulator

*January 2018 - August 2018*

*Worked in Simulation and on Hardware*

- Worked with Python, Matlab and C++ on Linux platforms.
- Collaborated with a multidisciplinary team of electrical engineers, mechanical engineers and computer scientists.
- Worked with DART simulation software to test my code before implementing on the hardware.
- Designed a PID controller to track a given trajectory for data collection on the manipulator.
- Applied Gaussian processes to model the uncertainties in the dynamics of the system.
- Performed inverse differential kinematics control on the Manipulator

### Introduction to Robotics Research

*August 2017 - December 2017*

- Tracked objects using computer vision tools and PID control on a Turtlebot. One of the tasks in this section was to maintain a constant distance between the robot and a moving target using a LIDAR, a camera and a PID controller.

- Obstacle avoidance using LIDAR and odometry. One of the tasks in this section was to drive the robot to a target location using signs for direction along the way. This required using image processing and classification techniques such as the hough circles and K Nearest Neighbors classifier.
- Used Simultaneous Localization and Mapping (SLAM) with ROS navstack for obstacle avoidance.
- Worked with ROS, python, OpenCV and Gazebo simulator on Linux platforms.

### **3D Printing Fabrication Technique**

*June 2015 - August 2015*

- Designed and 3D printed gear pumps for hydraulically actuated robots.
- These pumps were printed in a single piece without any form of assembly.
- Worked with Autodesk Inventor to design CAD models that were converted to STL files for printing.

## **RESEARCH AND TEACHING POSITIONS**

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### **Georgia Institute of Technology**

**Atlanta GA**

Graduate Research Assistant

Advisor: Seth Hutchinson, *PhD*

*May 2018 - Present*

Graduate Teaching Assistant

*August 2016 - May 2018*

*Signals and Systems, Junior year course (3 semesters)*

*Senior Design Project, Senior year course (2 semesters)*

### **Massachusetts Institute of Technology**

**CSAIL**

**Cambridge, MA**

Research Intern

Advisors: Daniela Rus, Robert McCurdy, *PhD*

*June 2015 - August 2015*

### **New Jersey Institute of Technology**

**Newark, NJ**

Undergraduate Research Intern

Advisor: Atam Dhawan, *PhD*

*May 2014 - August 2014*

Tutor, Math and Physics

*September 2013 - May 2016*

## **HONORS, AWARDS AND SOCIETIES**

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- Tau Beta Pi Honors Society, Member *Aug 2016 - Present*
- National Society of Collegiate Scholars, Member *Aug 2016 - Present*
- Phi Eta Sigma Honors Society, Member *Aug 2016 - Present*
- Institute of Electrical and Electronic Engineering, Member *Aug 2016 - Present*
- Albert Dorman Honors College, Presidential Scholar *Aug 2016 - Present*

## **OTHER ACTIVITIES**

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### **IDEO Design-a-thon**

**Seattle WA**

*Idea developer*

October 7-10, 2014

- IEEE conference on health-care technologies
- Collaborated with scientists in developing ideas for hydration monitoring in older population

### **Newark Elementary School**

**Newark NJ**

*Volunteer Elementary School Tutor*

October 2015 - May 2016

- Taught Math and English to a 3<sup>rd</sup> grade pupil