

# Victor Aladele

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## EDUCATION

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### Georgia Institute of Technology

PhD in Electrical Engineering

Anticipated Graduation

Research focus

### New Jersey Institute of Technology

B.S. in Electrical Engineering

**Atlanta GA**

*Aug 2016 - Present*

*Aug 2022*

*Robotics and Machine Learning*

**Newark NJ**

*May 2016*

## PUBLICATIONS

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- **IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)**  
Three first author publications (2020, 2021, [2022 under review](#)).
- **International Symposium on Experimental Robotics (ISER)**  
Co-author publication (2018)

## TECHNICAL SKILLS

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### Programming Languages

C++, Python

### Tools

Robot Operating System (ROS), Pytorch, Pybullet, Tensorflow

OpenAI gym, MATLAB, Gazebo, Blender, CUDA, Autodesk Inventor

## WORK EXPERIENCE

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### Georgia Institute of Technology

*Graduate Research Assistant*

**Atlanta GA**

*Aug 2016 - Present*

- PhD Advisor: *Seth Hutchinson, PhD*
- Dissertation Title: *Cooperative manipulation strategies for multi-robot and human-robot collaboration*

### Royal Institute of Technology (KTH)

*Visiting PhD Student*

**Stockholm, Sweden**

*Aug 2021 - Jan 2022*

- Host Advisor: *Danica Kragic Jensfelt, PhD*
- Designed a novel application of residual reinforcement learning to cooperative manipulation. Tools used include: Pybullet, Stable-baselines, OpenAI gym

### Google (Brain/Research)

*Research Intern*

**Remote / Mountain View CA**

*May 2021 - August 2021*

- Worked on developing reinforcement learning solutions for high-speed robotics.
- Developed and implemented curriculum learning algorithms to improve robot learning.

### Blue River Technology (A John Deere Subsidiary)

*Software Engineering Intern*

**Remote / Sunnyvale CA**

*May 2020 - Aug 2020*

- Worked on a team to develop software for cutting-edge *John Deere* machinery
- Tools and frameworks used include: C++17, CUDA, Flatbuffers, Protocol buffers, Google Test, Jira.

### Bosch (Advanced Corporate Research), BSH Home Appliances

*Robotics Software Intern*

**Sunnyvale CA**

*May 2019 - Aug 2019*

- Worked on implementing impedance control on a 6 DOF robotic arm for object insertion tasks.

- Tools used include: C++, Python, ROS, Rigidbody Dynamics Library (RBDL), Gazebo, Kinova arm.

**Massachusetts Institute of Technology**  
*Research Intern*

**Cambridge MA**  
June 2015 - Aug 2015

- **Advisors:** Daniela Rus *PhD*, Robert McCurdy, *PhD*
- Designed and 3D printed gear pumps for hydraulically actuated robots.
- Designed CAD models in Autodesk Inventor.

**CSAIL**

## RESEARCH PROJECTS

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### **Cooperative Mobile Manipulation**

*August 2019 - Present*

*Working both in simulation and on hardware*

- Developing deep reinforcement learning schemes for multi-robot collaboration.
- Using TrajOpt for motion planning on a single-arm pick-and-place task
- Implementing operational space control on KUKA IIWA7 arms that are mounted on mobile bases.
- Working in Gazebo, Drake and Pybullet.

## CLASS PROJECTS

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### **Robot Intelligence and Planning**

*Fall 2020*

- Implemented a version of DeepMind's AlphaZero chess AI. Used Deep Reinforcement Learning in conjunction with Monte-Carlo Tree Search to train a deep neural network to play the game of chess. Tools used include: Python, Pytorch, cuda.
- Implemented deep reinforcement learning algorithms like: DQN, REINFORCE and A2C.
- Implemented Rapidly-exploring Random Trees (RRT) to navigate a 2D map. Algorithm implementation included steering dynamics with nonlinear optimization and obstacle detection.

### **Computer Vision**

*Fall 2020*

- Image classification using deep learning framework; transfer learning with CNNs like Alexnet.
- Feature Matching, using feature detectors (Harris detector) and feature descriptors (SIFT) in pytorch.

### **Advanced Programming Techniques**

*Fall 2019*

- Used OpenGL to simulate a bitmapped football field with multiple drones controlled by a distributed MPI program. The goal was to create a simulation of multiple drones display over a football field.
- Designed a UDP server-client program.

## HONORS, AWARDS AND SOCIETIES

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- Tau Beta Pi Honors Society, Member *Aug 2014 - Present*
- Institute of Electrical and Electronic Engineering, Member *Aug 2013 - Present*

## EXTRACURRICULAR ACTIVITIES

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- Annually review applications for the undergraduate summer research program at MIT. *2018 - present*
- Co-chaired the "Multi-Robot Systems I" session at the IROS 2021 conference. *September 2021*
- Reviewed papers for publication at the following conferences: IROS(2020, 2021), ICRA(2021).
- Worked with Atlanta Public School teachers to develop a project-based learning (PBL) component of the Algebra II curriculum. *March 2021*