

# Victor Aladele

vua2@njit.edu, +1(301)-379-5241, website: [victoralad.github.io](https://victoralad.github.io)

## EDUCATION

---

### Georgia Institute of Technology

PhD in Electrical Engineering

Research focus

**Atlanta GA**

Aug 2016 - Aug 2022

*Robotics and Machine Learning*

### New Jersey Institute of Technology

B.S. in Electrical Engineering

**Newark NJ**

May 2016

## PUBLICATIONS

---

- Please refer to the website at the top of this page for details about my publications.

## TECHNICAL SKILLS

---

### Programming Languages

C++, Python

### Tools

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

OpenAI gym, MATLAB, Gazebo, Blender, CUDA, Pandas

## WORK EXPERIENCE

---

### Fox Robotics

*Senior Software Engineer*

**Austin TX**

Aug 2022 - Present

- Developing motion planning and control algorithms for self-driving forklifts
- Lead engineer on the development of new features for our customers.
- Working primarily in C++.

### Georgia Institute of Technology

*Graduate Research Assistant*

**Atlanta GA**

Aug 2016 - Aug 2022

- PhD Advisor: *Seth Hutchinson, PhD*
- Dissertation Title: *Cooperative manipulation strategies for multi-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 MacCurdy, *PhD* **CSAIL**
- Designed and 3D printed gear pumps for hydraulically actuated robots; worked with Autodesk Inventor.

## RESEARCH PROJECTS

---

### Cooperative Mobile Manipulation

*Aug 2019 - Aug 2022*

*Worked both in simulation and on hardware*

- Developed deep reinforcement learning schemes for multi-robot collaboration.
- Applied adaptive control for dual-arm disturbance rejection.
- Implemented operational space control on KUKA IIWA7 arms that were mounted on mobile bases.
- Applied Gaussian Processes as a semi-parametric control approach for a 7DOF manipulator.
- Worked in Gazebo, Pybullet, Matlab/Simulink and Drake.

## CLASS PROJECTS

---

### 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.
- Object detection with limited training data; applied transfer learning in Pytorch.

### Advanced Programming Techniques

*Fall 2019*

- Used OpenGL to simulate bitmapped images and created a distributed MPI program.
- Designed a UDP server-client program.

## EXTRACURRICULAR ACTIVITIES

---

- 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*