Jonah Okike-Hephzibah

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Education

Cornell University | College of Engineering — **Ithaca, NY**
M.Eng in Mechanical Engineering (Emphasis: Dynamics, Controls and Robotics) — *January 2018–Dec 2018*

Cornell University | College of Engineering — **Ithaca, NY**
B.S. in Mechanical Engineering — *August 2015–August 2018*

Santa Monica College — **Santa Monica, CA**
Honors & STEM Curriculum — *Aug 2012–June 2015*

Relevant Coursework: Multivariable Control Theory; Feedback Control Systems; Stochastic Control; Foundations of Robotics; Computer Vision; Embedded Operating Systems; Digital Systems Design using Microcontrollers; Machine Learning for Intelligent Systems; System Dynamics; Intermediate Dynamics & Vibrations; Advanced Dynamics; Mechatronics; Object-Oriented Programming and Data Structures; Assembly Programming

Technical Experience

Cyngn — **Menlo Park, CA**
Vehicle Platform Intern — *June 2018 – Aug 2018*
- Ran performance analysis of vehicle control system.
- Worked on hardware for autonomous vehicle systems.

Cornell Autonomous Systems Laboratory — **Ithaca, NY**
Independent Undergraduate Researcher and Intern (Principal Investigator: Hadass Kress-Gazit) — *Feb. 2017 – Dec 2018*
- Collaborated with a PhD and postdoc student to interface collision avoidance via barrier certificates and path planning strategies for efficient navigation using Python
- Developed a scalable controller for multiple robots to enable navigation of a swarm using Vicon Motion Systems as positional feedback
- Interfaced an ESP8266 Microcontroller with Hexbugs to enable wireless communication using the Arduino IDE

Cornell University, Department of Mechanical & Aerospace Engineering — **Ithaca, NY**
Graduate Teaching Assistant - Mechatronics — *Aug 2018 – Dec 2018*
- Guided students as a lab TA to build various circuits, integrate circuits with an Arduino and build autonomous robots for a final competition.

Cornell Cup Robotics — **Ithaca, NY**
Mechanical Modular Robot (ModBot) Sub-Team Member — *Sep 2015 – Dec 2016*
- Created a telepresence attachment for remote control of the Modbot.
- Worked on high level controller for the ModBot platform with omni directional wheels using MATLAB.
- Performed motor analysis to ensure proper performance of the robot under varied loads.

UCLA, The Mechatronics and Controls Laboratory — **Los Angeles, CA**
Summer Undergraduate Student Researcher (400+Hours) — *Jun 2015 – Aug 2015*
- Designed MRI compatible robotic arm for biopsy using SolidWorks and 3D printed components for assembly
- Implemented a PID controller using LabVIEW, interfaced through myRIO

Projects

Deep Convolutional Generative Adversarial Networks (DCGAN) | CS 6670 Computer Vision
- Implemented and trained a DCGAN on the MNIST dataset using PyTorch.

Robotic Arm Simulation | MAE 5710 Applied Dynamics
- Simulated an N-link robotic arm for waypoint navigation using inverse kinematics

Robust Control of a Bi-Copter | MAE 6780 Multivariable Controls
- Created a model of a bi-copter in simulink and controlled it using sliding mode control.

Autonomous Nerf Gun With Stereo Vision | ECE 5725 Embedded Operating Systems
- Used a Raspberry PI with a stereo calibrated set of cameras to determine global positioning of a target and to determine the necessary trajectory for nerf gun to shoot the target.

Stabilization of an Inverted Pendulum on a Cart | MAE 5780 Feedback Control Systems
- Stabilized the linearized dynamical model of an inverted pendulum using control concepts and applied controller to a physical system

The N-Link Pendulum | MAE 4730 Intermediate Dynamics and Vibrations
- Implemented an N-Link Pendulum deriver and animator using three different numerical approaches in MATLAB.

Skills & Interests

Technical: MATLAB, Simulink, LabVIEW, Java, Python, Linux, C, Git, Microcontrollers, PID, LQR, CAN Bus, CUDA, PyTorch, ROS
Extracurricular: Shake Ultimate Club Frisbee team, Theta Tau Engineering Fraternity, DREAM Team.