Ahad Rauf

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EDUCATION

University of California, Berkeley *Aug 2016 – June 2020*

B.S., Electrical Engineering and Computer Science (EECS), GPA: 3.953

- Relevant Courses: Introduction to Robotics, Introduction to MEMS, Introduction to Embedded Systems, Feedback Control Systems, Analog Integrated Circuits, Signals and Systems, Computer Architecture, Introduction to Information Devices and Systems

WORK EXPERIENCE

OURS Technology, Inc. *May 2018 – Aug 2018*

Robotics Engineering Internship

- Developed a high precision automatic testing system for on-chip optical waveguides
- Designed the entire testing pipeline, including machine learning object detection for chip detection, 200-nm precision scanning for accurate waveguide-fiber alignment, and multithreaded data processing for efficient 8-axis motion control
- Configured company GPU servers for efficient machine learning support and LDAP network access
- Wrote bash and Python scripts to remotely diagnose motion control hardware failures

Elysian Labs *Sept 2017 – Dec 2017*

Robotics Engineering Internship

- Customized drones for research into efficient autonomous tracking systems
- Designed a low-power IR receiver and noise filter to accurately locate the transmitter from far away, as well as a sensor that could be used to automatically adjust the drone's path to avoid obstacles
- Developed a drone swarm simulation software to model optimal task distribution for up to 1000 drones during common group flight maneuvers

RESEARCH EXPERIENCE

Swarm Lab *Jan 2019 – present*

Advisors: Brian Kilberg, Kristopher Pister

- Developing millimeter-scale airfoils and MEMS control mechanisms for pico air vehicles
- Investigating non-silicon microrobot materials for improved manufacturability and control dynamics

Device Physics Research Lab *Jan 2018 – Dec 2018*

Advisors: Niklas Roschewsky, Sayeef Salahuddin

- Designed 3-mask ferromagnetic resonance stack to measure the DC voltage generated by Al/Pt/Py spin pumping; optimized mask layout and processing for high-efficiency operation
- Proposed and constructed a new quadrupole magnet testing station for generating highly uniform magnetic fields up to 150 mT with controllable orientation

Berkeley Artificial Intelligence Research Lab (BAIR) *Jan 2018 – May 2018*

Advisors: Ke Li, Jitendra Malik

- Explored new neural net configurations to enhance image quality and variation when generating novel images given a high-dimensional data distribution
- Improved progressive training of generative adversarial networks (GANs) to reduce training time and remove potential sources of instability

HONORS

Most Useful Product Award *Sept 2016 – Nov 2016*

Dorm Ex Machina Robotics Competition

- Designed and built robotic trash can to promote responsible waste disposal in line with UC Berkeley's Zero Waste Project; streamlined disposal through robotic sensing and voice activation
- Received "Most Useful Product" award for exceptional focus on environmental awareness
- Customized noise reduction algorithms to improve voice recognition reliability by 25%

Regents' and Chancellor's Scholarship *March 2016*

- Highest UC Berkeley merit award recognizing top 2% of incoming students

TECHNICAL SKILLS

- Proficient at C, C++, Java, Python, MATLAB, ROS, and Linux
- Skilled at PCB/IC design and CAD design