
REINER N. DIZON

Address and phone available upon request

EDUCATION

- 2019 – Present Ph.D. Electrical and Computer Engineering
University of Florida
Doctoral Advisor: Dr. Swarup Bhunia
- 2015 - 2018 B.S.E. Computer Engineering
Summa Cum Laude
University of Nevada, Las Vegas, Honors College
Honors Thesis: *Efficient Image Coding and Transmission in Deep Space Communication*
Supervising Professor: Dr. Emma Regentova
Minors: Computer Science and Mathematical Science
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RESEARCH SPECIALIZATIONS AND INTERESTS

I am an engineering student interested in a career in electrical and computer engineering research. My research interests include Internet of Things, hardware security, and robotics.

PUBLICATIONS

- Dizon, R.,** Solis A., Essaqi, A., Isaacs, M., McKenna, A., Gibbs, A., Lee, D., Harris, S. (2020). “Fly Roller: Development of an Instrument to Exercise Fruit Flies.” *17th International Conference on Information Technology: New Generations*
- Dizon, R.** (2018) “Efficient Image Coding and Transmission in Deep Space Communication.” *Theses*. 31. https://digitalscholarship.unlv.edu/honors_theses/31
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PRESENTATIONS

- Dizon, R.,** Solis A., Barnes, C., Isaacs, M., Harris, S., and Lee, D. (2019). “A Robot to Test Control Strategies for Bipedal Walking.” Scientific Talk at the UNLV Spring 2019 Undergraduate Research Conference, Las Vegas, NV.
- Dizon, R.,** Solis A., Barnes, C., Isaacs, M., Harris, S., and Lee, D. (2019). “A robotic platform to test control strategies for bipedal walking.” Scientific Talk at the 2019 Society for Integrative and Comparative Biology Conference, Tampa, FL.
- Dizon, R.** (2018). “Efficient Image Coding and Transmission in Deep Space Communication.” Poster Presentation at the 2nd Biannual UNLV Honors College Research and Creative Honors Forum, Las Vegas, NV.
- Dizon, R.** (2017). “On-board processing of planetary images.” Poster Presentation at the Nevada NASA EPSCoR Statewide Meeting, Las Vegas, NV.

RESEARCH EXPERIENCE

Lab Experience:

- 2019 - Present* Graduate research assistant who focuses on embedded systems, Internet of Things, and hardware security research.
Faculty Research Advisor: Dr. Swarup Bhunia
- 2018 - 2019* Research assistant in an interdisciplinary research team that designed, built, and tested a bipedal robot that is controlled using a simple locomotion model derived from human walking biomechanics.
Faculty Research Mentors: Dr. Sarah Harris and Dr. David Lee
- 2017 - 2018* Student researcher who worked on an engineering study that compares the fault tolerance and resource utilization among certain image coding algorithms for deep space communication for hardware implementation on FPGA.
Faculty Research Mentor: Dr. Emma Regentova

Teaching Experience:

- 2017* Undergraduate Teaching Assistant for a course on Embedded Digital Signal Processing. Assisted with hardware set up and tutoring of various topics: image and audio operations, signal processing, and hardware mapping.
Instructor: Dr. Emma Regentova

PROJECTS

- 2020 - Present* **Drone-Based Remote Maintenance:** Creating a system to use UAVs as automated maintenance crew in remote locations.
- 2019 - Present* **SAINT – Self-Aware Infrastructure with Intelligent Technologies:** Making a framework to supplement emergency response using environmental sensors, actuators, and UAVs.
- 2018 - 2019* **Dynamic Control Platform:** Worked on the instrumentation and integration of force and accelerometer sensors and datalogging peripherals to a microcontroller as part of a bipedal robot controlled using a simple locomotion model of human biomechanics.
- 2018 - 2019* **Fly Roller:** Programmed the user interface and designed a printed circuit board of a speed-controlled system for rotating test tubes containing two population of flies which will be used for metabolic analysis.
- 2017 - 2018* **Augmented Reality Motorcycle Helmet:** Designed and built a Bluetooth hands-free system on a helmet with voice control and heads up display, worked specifically on the voice recognition and the printed circuit board.

- 2017* **Canny Edge Detector:** Designed an FPGA hardware implementation of the Canny edge detection algorithm on the DE2-115 board with Gaussian and Sobel filters as well as parameterized double thresholding.
- 2017* **WeFee Bot:** Designed a Wi-Fi robot system with wall detection with a partner. Implemented using Atmega328p microcontroller and ESP32 Wi-Fi module as gateway to a smartphone using a mobile application.

HONORS AND AWARDS

- 2019 - 2024* Graduate Student Preeminence Award Fellowship Recipient, University of Florida
- Jul 2020* DAC2020 Fellow, 57th Design Automation Conference
- Dec 2019* 2nd Place in Student Hardware Demos, Warren B. Nelms Annual 2019 IoT Conference, Gainesville, FL
- Jan 2019* 2019 Annual Meeting Charlotte Mangum Student Support Program Recipient, Society of Integrative and Comparative Biology
- 2018 – 2019* Rebel Research and Mentorship Program (RAMP) Travel Grant Recipient, Graduate College, University of Nevada, Las Vegas
- 2018* Troy and Selma Bartlett Engineering Scholarship Recipient, HRH College of Engineering, University of Nevada, Las Vegas
- 2018* Summer Undergraduate Research Funding (SURF) Recipient, Office of Undergraduate Research, University of Nevada, Las Vegas
- 2015 – 2018* Dean’s List, HRH College of Engineering, University of Nevada, Las Vegas
- 2017* Gilman and Bartlett Engineering Scholarship, HRH College of Engineering, University of Nevada, Las Vegas
- 2016* 1st Place, Junior Design Competition, Department of Electrical and Computer Engineering, University of Nevada, Las Vegas
- 2015 – 2018* Governor Guinn Millennium Scholarship

RELEVANT COURSEWORK

University of Nevada, Las Vegas

ECG 604 Modern Processor Architecture
ME 625 Robotics

University of Florida

EEE5716 Introduction to Hardware Security and Trust
EEE6744 Hands-on Hardware Security
EEL5840 Fundamentals of Machine Learning
EEL6825 Pattern Recognition

ACADEMIC AND PROFESSIONAL MEMBERSHIP

Nov 2017 – Present Tau Beta Pi (TBP)
Advisor (Nevada Beta Chapter), May 2019 – Present
President (Nevada Beta Chapter), June 2018 – May 2019

- Lead the overall operation of the organization and delegated duties to fellow executive board members.
- Managed the initiation process for new members as well as lead the general and officer meetings discussing club matters.

Sept 2017 – Present Institute of Electronics and Electrical Engineers (IEEE)

Apr 2020 – Present Eta Kappa Nu (HKN)

Apr 2018 – Present Phi Kappa Phi (PKP)

Oct 2018 – Dec 2019 Society of Integrative and Comparative Biomechanics (SICB)

Feb 2017 – May 2019 National Society of Professional Engineers (NSPE)

CONFERENCE ACTIVITIES

Dec 2019 Co-Chair, Student Poster Committee and Webmaster, Warren B. Nelms Annual 2019 IoT Conference, Gainesville, FL

VOLUNTEER ACTIVITIES

Feb 2020 Volunteer, UF ECE Spring Visit 2020
Mar 2019 College Volunteer, Las Vegas Dance Marathon
Feb 2019 Volunteer, Introduce a Kid to Engineering Day
Oct 2017 Volunteer, Engineering Tutoring Lab