# Bryan Jose Medina

*Curriculum Vitae*

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## Education

2016– **B.S. Computer Science and Mathematics**, *University of Central Florida*, Orlando, FL, GPA: 3.78/4.00.

## Technical Skills

Programming: Python, Java, C++, C, R, Matlab, Javascript, LaTeX

Software: Emacs, MS Word, MS Powerpoint

Libraries and Frameworks: TensorFlow, Keras, PyTorch, PyGame, Processing, Numpy, SciPy, Matplotlib

## Experience

July 2020- **Vice-President, *SACNAS***, University of Central Florida
Advisor: Michael Aldarondo-Jeffries
Planned outreach activities with club Outreach Coordinator
Worked with advertising chair to promote club on social media

Summer 2020 **MSRP-BIO Research Intern, *Department of Brain and Cognitive Sciences***, Massachusetts Institute Of Technology
Advisor: Dr. Josh McDermott
Worked on neural network models for understanding pitch perception
Developed code in TensorFlow to perform numerous auditory tasks and developed layer-wise tests to compare performance

Mar. 2020- **Co-Founder**, **Vice-President, *Cognitive Sciences Club***, University of Central Florida
Advisor: Dr. Luis Favela
Organized workshops for techniques in Cognitive Sciences research
Invited professors to give talks on their research
Reach out and advertise club to students around campus

Jan. 2020- **Journal Club Attendee, *UCF NLP Group***, University of Central Florida
Advisor: Dr. Fei Liu
Accepted to attend biweekly meetings on various topics in natural language processing, such as multi-document summarization, natural language generation, and natural language understanding
Learning PyTorch with the help of graduate students and Dr. Fei Liu
Gave the lab a presentation on recurrent neural networks, long short term memory units, gated rectified units, and transformers

Jan. 2020 **Attendee, *Quantitative Methods Workshop***, Massachusetts Institute Of Technology

Attended workshops on spike train analysis, machine learning, systems neuroscience, cognitive science, and genomics

Networked with professors, post-docs, graduate students and research assistants.

Assisted other attendees with MATLAB questions

Nov. 2019 – Feb. 2020 **Independent Researcher**, University of Central Florida

Developing generative models with gated recurrent networks in order to optimize sound synthesis

Paper titled *Towards Improving Adversarial Audio Synthesis with Gated Recurrent Units* in prep

Aug. 2019 – Feb. 2020 **Undergraduate Research Assistant, *Laboratory for Autonomy-Brain Exchange (LabX)***, University of Central Florida

Advisor: Dr. Ben D. Sawyer

Experimented with Generative Adversarial Networks and how they function with images, audio, and brain signals like Electroencephalograms

Assisted in editing and developing code for a driving simulation study

Summer 2019 **NIH-Funded Undergraduate Program in Neural Computation Research Fellow, *Center for the Neural Basis of Cognition***, Carnegie Mellon University

Advisor: Dr. Robert E. Kass

Used statistical analyses, like Two-way ANOVA and t-tests, in Python, Matlab, and R to establish feed-forward functional relationships between six visual processing regions in mice

Developed code as foundation for future exploratory research

Aug. 2018 – Feb. 2019 **Undergraduate Research Assistant, *Center for Research in Computer Vision***, University of Central Florida

Advisor: Dr. Mubarak Shah

Learned how to use and develop code with TensorFlow and Keras

Developed convolutional neural networks to recognize actions in video files

## Awards and Honors

July 2020 ***Hispanic Heritage Scholarship Fund of Metro Orlando* Scholar**

June 2020 ***Hispanic Scholarship Fund* Scholar**

Oct. 2019 **Ronald E. McNair Scholar**

2017– **President's Honor Roll** (x3)

2017– **Dean's List** (x4)

Aug. 2016 **Bright Futures Academic Scholar**

## Poster Presentations, Conference, and Abstracts

**Vision Sciences Society Annual Meeting** Hernandez, C. I., Rahill, K., Pham, M., Manriquez, L., Louis, P., Figueroa, A., **Medina, B. J.**, Wolfe, B., Sawyer, B. D., (2020, May). *Prevalence effects are not driving hazard detection on the road.* Abstract accepted. St. Pete Beach, FL. Did not attend due to COVID-19 (Coronavirus) pandemic.

**Showcase of Undergraduate Research Excellence** Hernandez, C. I., Rahill, K., Pham, M., Manriquez, L., Louis, P., Figueroa, A., **Medina, B. J.**, Wolfe, B., Sawyer, B. D., (2020, April). *Prevalence effects are not driving hazard detection on the road.* Abstract accepted to Conference at the University of Central Florida, canceled due to COVID-19 (Coronavirus) pandemic.

***Center for the Neural Basis of Cognition*'s Summer Undergraduate Poster Session**. **Medina, B. J.**, Olanrire, T., Siegle, J., Kass, R. E., (2019, August). *Response Latencies Across Six Visual Areas in the Mouse*. Presented research conducted with Dr. Robert E. Kass and Tolani Olanrire, Ph.D. student in Machine Learning, at Carnegie Mellon University.

## Teaching

Oct. 2019 **Python Lecturer, *LabX***, University of Central Florida

Presented to *LabX* lab members the basics of python programming, such as variables, functions, conditional statements, loops, and the like

Demonstrated and walked through pre-constructed examples made before presentations

Jan. 2018– **Undergraduate *EXCEL* Tutor**, University of Central Florida

Tutored students in UCF's *EXCEL* program on various topics in Mathematics, Physics, and Computer Science

Mentored students on future opportunities to explore and how to study for current and future courses

June 2017 – July 2017 **Teaching Assistant and Lecturer, *Summer Institute @ UCF***, University of Central Florida

Lectured video game development to various students in Orange, Osceola and Seminole county

Created various assignments and examples for students to learn from and use as reference material

Graded assignments from students in a timely manner.

## Invited Talks and Workshops

Sept. 2019 **STEM Seminar Student Panel**, University of Central Florida

Discussed techniques, tips and tricks on how to succeed as an undergraduate in a STEM field.

Dec. 2018 **Mathematics Workshop**, Hialeah Gardens High School

Presented and lectured students on topics in Calculus for AP Exam Preparation.

Demonstrated to students the career possibilities available to them upon studying mathematics.

Nov. 2018 **Talk and Lecture on Computer Science and Engineering**, Orange County Preparatory Academy

Discussed to elementary school students the importance of diversity in STEM fields and careers

Explained to students concepts of Python program and showed students how to construct a simple game with the *PyGame* Python library

## Volunteering

Feb. 2020, Feb. 2019 **Volunteer, *SECME Regional Competition***, University of Central Florida

Helped students setup and present their SECME competition entries

Discussed competition entries with individual groups

Jan. 2020 ***SECME Codecraft Computer Programming Competition* Judge**, University of Central Florida

Judged competitions entries from elementary school and middle school students.

Provided feedback on their project submissions and how they could improve as programmers

Nov. 2019 ***GIS Day* Voluneer**

Helped set up event and guide students to designated work stations

Jan. 2019 ***SECME Codecraft Computer Programming Competition* Judge**, University of Central Florida

Judged competitions entries from middle school and high school students.

Evaluated them on efficiency of code, use of comments, readability, and creativity of solution

Nov. 2016 ***Hour of Code* Teacher**, University of Central Florida

Taught basic programming concepts to elementary school students in a hands-on environment

## Relevant Coursework

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|---|---|
| Computer Science Courses | Discrete Structures II (Theory of Computation), Computer Science I (Data Structures), Object Oriented Programming, Computer Science II (Algorithms), Robot Vision, Machine Learning**, Advanced Artificial Intelligence**, Processes for Object Oriented Software Development, Senior Design I*. |
| Mathematics Courses | Calculus I-III, Ordinary Differential Equations, Matrix and Linear Algebra, Linear Algebra*, Probability, Random Processes and Applications. |
| Relevant Coursework | Statistical Theory I, Chemistry I, Chemistry II, General Psychology*, Biological Principles*, Numerical Computing. |

* - *To be completed by May 2019*

** - *Graduate Coursework*

## Languages

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| English | Fluent |
| Spanish | Fluent |
| Portuguese | Basic |