

Bryan Jose Medina

Curriculum Vitae

Education

- 2021-Present **Ph.D. Student, Brain and Cognitive Sciences,**
Massachusetts Institute of Technology, Cambridge, MA.
Advised by Dr. Josh McDermott and Dr. Ila Fiete
- 2016-2021 **B.S. Computer Science, Minor in Mathematics, Minor in Cognitive Sciences,**
University of Central Florida, Orlando, FL.

Technical Skills

- Programming PYTHON, JAVA, C++, C, R, MATLAB, JAVASCRIPT, L^AT_EX, BASH
Software EMACS, R STUDIO
Libraries and Frameworks TENSORFLOW, KERAS, PYTORCH, PYGAME, PROCESSING, NUMPY, SCIPY, MATPLOTLIB, PLOTLY

Research Experience

- 2021- **Graduate Student, *Fiete Lab***, MIT
Advisor: Dr. Ila Fiete
- 2021- **Graduate Student, *Laboratory for Computational Audition***, MIT
- 2020-2021 **Visiting Student, *Department of Brain and Cognitive Sciences***, MIT
- 2020 **MSRP-BIOx Research Intern, *Center For Brains, Minds, and Machines***, MIT
Advisor: Dr. Josh McDermott
- 2019 **Undergraduate Program in Neural Computation Research Intern, *Center for the Neural Basis of Cognition***, Carnegie Mellon University
Advisor: Dr. Robert E. Kass
- 2018-2019 **Undergraduate Research Assistant, *Center for Research in Computer Vision***,
University of Central Florida
Advisor: Dr. Mubarak Shah
- 2017 **Undergraduate Research Assistant, *Hu-Lab***, University of Central Florida
Advisor: Dr. Haiyan Hu

Awards and Honors

- 2021 ***Dean of Science Fellow***, MIT
- 2021 ***National Science Foundation Graduate Research Fellow***
- 2021 ***Order of the Pegasus Award*** (Most Prestigious and Significant Award at UCF)
- 2020 ***Hispanic Heritage Scholarship Fund of Metro Orlando Scholar***
- 2020 ***Hispanic Scholarship Fund Scholar***
- 2020 **McNair Summer Research Institute Scholarship**
- 2020 **Massachusetts Institute of Technology Summer Research Fellow (NSF Funded)**
- 2019 **Ronald E. McNair Scholar**
- 2019 **Carnegie Mellon University Summer Research Fellow (NIH Funded)**

2017 **President's Honor Roll** (x4)
2017 **Dean's List** (x5)
2016 **Bright Futures Academic Scholar**

Publications

Chen Y, Douglas H, **Medina B.J.**, Olanrinre M, Siegle J.H., Kass R.E. (In Review). *Feature Coupling Across Populations of Spiking Neurons*. **PLOS Computational Biology**.

Abstracts, Conferences, and Presentations

UCF 2021 Student Symposium **Medina, B. J.**, Saddler, M. R., McDermott, J. H., (2021, April). *Pitch Representations Emerge in Artificial Neural Networks Optimized for Everyday Auditory Tasks*. Poster Presentation.

ARO 2021 **Medina, B. J.**, Saddler, M. R., McDermott, J. H., (2021, February). *Pitch Representations Emerge in Artificial Neural Networks Optimized for Everyday Auditory Tasks*. Abstract Accepted.

CECIIS-2020. **Medina, B. J.**, Saddler, M. R., McDermott, J. H., (2020, October). *Investigating artificial neural networks optimized for ecological auditory tasks as a normative model of pitch perception*. Abstract accepted. Oral presentation.

SACNAS. **Medina, B. J.**, Saddler, M. R., McDermott, J. H., (2020, October). *Investigating artificial neural networks optimized for ecological auditory tasks as a normative model of pitch perception*. Abstract accepted. Poster presentation.

Baylor University McNair Conference. **Medina, B. J.**, Saddler, M. R., McDermott, J. H., (2020, October). *Investigating artificial neural networks optimized for ecological auditory tasks as a normative model of pitch perception*. Abstract accepted. Poster presentation.

MSRPx BIO Presentation. **Medina, B. J.**, Saddler, M. R., McDermott, J. H., (2020, August). *Investigating artificial neural networks optimized for ecological auditory tasks as a normative model of pitch perception*. Oral presentation.

UCLA McNair Conference. **Medina, B. J.**, Saddler, M. R., McDermott, J. H., (2020, July). *Investigating artificial neural networks optimized for ecological auditory tasks as a normative model of pitch perception*. Abstract accepted. Poster presentation.

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.**, Olanrinre, 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 Olanrinre, Ph.D. student in Machine Learning, at Carnegie Mellon University

Leadership, Membership and Outreach

2020-2021 **Graduate Prep Advisor, Academic Advancement Programs**,
University of Central Florida
Supervisor: Colleen Smith

2020 **Attendee, Virtual Brains, Minds, and Machines Summer Course**,
Center for Brains, Minds, and Machines

- 2020-2021 **Vice-President, *SACNAS***, University of Central Florida
Advisor: Michael Aldarondo-Jeffries
- 2020-2021 **Co-Founder, Vice-President, *Cognitive Sciences Club***, University of Central Florida
Advisor: Dr. Luis Favela
- 2020 **Journal Club Attendee, *UCF NLP Group***, University of Central Florida
Advisor: Dr. Fei Liu
- 2020 **Attendee, *Quantitative Methods Workshop***, Massachusetts Institute Of Technology
Advisor: Dr. Mandana Sassanfar
- 2020 ***GIS Day* Volunteer**, University of Central Florida
- 2019, 2020 **Volunteer, *SECME Regional Competition***, University of Central Florida
- 2019, 2020 **Judge, *SECME Codecraft Computer Programming Competition***,
University of Central Florida
- 2018-2019 **STEM Ambassador *Initiatives in STEM***, University of Central Florida
Advisor: Rene Johnston
- 2016 **Teacher, *Hour of Code***, University of Central Florida

Teaching

- 2022 **Co-Lecturer, *The Ballad of You and Your Brain (MIT Educational Studies Program SPARK!)***, MIT
Co-Lecturer: Yasmine Sami
- 2021 **Teaching Assistant, *Quantitative Methods Workshop***, MIT
- 2020 **Tutorial, *UCF NLP***, University of Central Florida
- 2019 **Python Lecturer, *LabX***, University of Central Florida
- 2019-2020 **Undergraduate *EXCEL* Tutor**, University of Central Florida
- 2017 **Teaching Assistant and Lecturer, *Summer Institute @ UCF***,
University of Central Florida

Invited Podcasts, Talks, and Workshops

- 2020 **Graduate School Preparation Podcast, *Elements of an Application for Funding***,
University of Central Florida
- 2020 **Undergraduate Research and Transfer Process Panel**, Valencia College
- 2019 **STEM Seminar Student Panel**, University of Central Florida
- 2018 **Mathematics Workshop**, Hialeah Gardens High School
- 2018 **Lecture on Computer Science and Engineering**, Orange County Preparatory Academy

Certification

- 2020 ***CITI Program*, Social / Behavioral Research Investigators and Key Personnel**

Relevant Coursework

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| Computer Science + Statistics Courses | Object Oriented Programming, Algorithms, Robot Vision, Machine Learning*, Advanced Artificial Intelligence*, Senior Design, Statistical Theory I, Statistical Foundations for Data Science and Artificial Intelligence, Computer Understanding of Natural Language*, Information and Inference (6.437), Numerical Computing |
| Mathematics Courses | Calculus I-III, Ordinary Differential Equations, Linear Algebra, Probability, Random Processes and Applications, Introduction to Topology |

Neuroscience Language and Culture, Philosophy of Mind, Perception, Minds and Machines: Philosophy of
+ Cognitive Cognitive Science, Systems Neuroscience I (9.011), Computational Cognitive Science (9.660),
Sciences Computational Cognitive Neuroscience (NEURO1401)
courses

* - *Graduate Coursework (completed during undergrad)*

** - *In Progress*

*** - *To be completed*

Languages

English Fluent

Spanish Fluent

Portuguese Basic