

# Bryan Jose Medina

## Curriculum Vitae

✉ [bjmedina@mit.com](mailto:bjmedina@mit.com)  
📁 [bjmedina.github.io](https://github.com/bjmedina)  
🌐 [bjmedina](#)  
🌐 [bjmedina](#)  
🐦 [bj\\_mdn](#)

### Education

- 2021- Present **Ph.D. Candidate, 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<sup>A</sup>T<sub>E</sub>X, BASH  
Software EMACS, R STUDIO  
Libraries and Frameworks PYTORCH, PROCESSING, NUMPY, SCIPLY, MATPLOTLIB, PLOTLY, ARDUINO

### 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 ***Henry E. Singleton Fellowship*,** MIT  
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.**, Olarinre M, Siegle J.H., Kass R.E. (Accepted in 2022). *Population Burst Propagation Across Interacting Areas of the Brain*. **Journal of Neurophysiology**.

---

## Abstracts, Conferences, and Presentations

**ARO 2025** Medina, B. J., Li, Y.C., Godoy, R, McDermott, J.H. (2025, February). *Memory Errors Reveal Cross-Cultural Variation in Representations of Environmental Sounds*. In review.

**ARO 2025** McDermott, J.H., **Medina, B. J.**, Hess, P, McPherson, M, Undurraga, E, Godoy, R (2025, February). *Cross-Cultural Influences of Beating on Music Perception*. In review.

**CCN 2024**. Hicks, J. M., **Medina, B. J.**, McDermott, J. H., (2023, August). *Discovering the Perceptual Space of Natural Sounds from Similarity Judgments*. Poster Presentation.

**ARO 2024**. McPherson, M. J., Undurraga, E., **Medina, B. J.**, McDermott, J. H., (2024, February). *Preferences for loudness and pitch vary across cultures*. Poster Presentation.

**Cog Sci 2023**. Clark, T. H., Tuckute, G., **Medina, B. J.**, Fedorenko, E, (2023, August). *Context-sensitive features predict sentence memorability in the absence of memorable words*. Poster Presentation.

**CCN 2023**. **Medina, B. J.**, McDermott, J. H., (2023, August). *Normative modeling of auditory memory for natural sounds*. Poster Presentation.

**COSYNE 2023**. **Medina, B. J.**, McDermott, J. H., (2023, March). *Normative modeling of auditory memory for natural sounds*. Poster Presentation.

**ARO 2023**. **Medina, B. J.**, McDermott, J. H., (2023, February). *Psychoacoustics of Auditory Memory for Natural Sounds*. Poster Presentation.

**Cog Lunch**. **Medina, B. J.**, (2022, November). *Understanding auditory memory*. Department-wide talk at MIT.

**MSRP Bio Presentation.** Richardson, A. G., **Medina, B. J.**, Hicks, J. M., McDermott, J. H., (2022, August). *Discovering the Perceptual Space of Natural Sounds from Similarity Judgements*. Poster Presentation.

**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.**, 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

---

## Leadership, Membership and Outreach

2024 **Emerson/Harris Jazz Scholar**, MIT

Supervisor: Dr. Frederick Harris

2023 **Decoding the Brain, Cambridge Science Festival**, MIT

Supervisor: Dr. Jill Crittenden

2023 **Speed Science, McGovern Institute for Brain Research**, MIT

- Supervisor: Julie Prior, Kara Flyg
- 2023 **Decoding the Brain, *McGovern Institute for Brain Research***, MIT  
Supervisor: Dr. Jill Crittenden
- 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 Technol-  
ogy  
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

- 2023 **Teaching Assistant, *9.35 Perception***, MIT  
Advisor: Josh McDermott
- 2022 **Co-Lecturer, *The Ballad of You and Your Brain (MIT Educational Studies  
Program SPARK!)***, MIT  
Co-Lecturer: Yasmine Sami
- 2022 **Lecturer, *Introduction to Python Programming, Peer Lecture Series***, MIT
- 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

## Advisees

- 2023-2024 **Yue Chen Li (MIT UROP)**

2023-2024 **Olivia Honeycutt** (MIT UROP)

Coadvised by: Dr. Malinda McPherson (professor at Purdue University)

2022 **Ariana Richardson** (MSRP). *Currently*: Undergraduate at Georgia Institute of Technology

Coadvised by: Jarrod Hicks

## Invited Panels, Podcasts, Talks, and Workshops

2024 **Judge, *MassJAS Symposium***, MIT

2024 **Guest Lecturer for *Course "Brains, Minds, and Machines"***, CUNY Hunter College

2023 **Judge, *MassJAS Symposium***, MIT

2023 **Graduate Student Panel, *Academic Advancement Program***, University of Central Florida

2022 **Latinx Graduate Student Panel, *Academic Advancement Program***, University of Central Florida

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

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 + Cognitive Sciences courses Language and Culture, Philosophy of Mind, Perception, Minds and Machines: Philosophy of Cognitive Science, Systems Neuroscience I (9.011), Computational Cognitive Science (9.660), Computational Cognitive Neuroscience (NEURO1401), Biology of the Inner Ear (SHBT 201), Audition: Neural Mechanisms, Perception and Cognition (SHBT 205), Cognitive Science (9.012)

\* - *Graduate Coursework (completed during undergrad)*

\*\* - *In Progress*

\*\*\* - *To be completed*

**————** Languages

English Fluent  
Spanish Fluent  
Portuguese Basic