EDUARDO DINIZ

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University of Pittsburgh ⋄ 3700 O'Hara St ⋄ Pittsburgh, PA 15213

EDUCATION

University of Pittsburgh   *August 2015 - July 2022 (anticipated)*

Doctor of Philosophy, Department of Electrical & Computer Engineering, Control Engineering
Thesis: *Network Mechanisms of Short-Term Storage and Memory Consolidation of Temporal Sequences in Discrete Attractor Networks.*
Advisors: *Dr. Zhi-Hong Mao and Dr. Mingui Sun*

University of Brasilia   *September 2009 - December 2014*

Bachelor of Science, *summa cum laude*, School of Engineering, Electronics Engineering
Minor in Biomedical Engineering

University of Dundee   *January 2013 - January 2014*

Visiting Research Student, School of Science & Engineering, Biomedical Engineering

RESEARCH EXPERIENCE

University of Pittsburgh   August 2019 - present
Research Assistant   *Pittsburgh, PA*

· **Advisors:** *Dr. Tamer Ibrahim and Dr. Howard Aizenstein*
· **Description:** Development of deep learning models for MRI data longitudinal harmonization.

University of Pittsburgh   August 2015 - July 2019
Research Assistant   *Pittsburgh, PA*

· **Advisors:** *Dr. Zhi-Hong Mao and Dr. Mingui Sun*
· **Description:** Development of computational models of working memory to identify candidate dynamic mechanism of storage and memory consolidation of novel temporal sequences in attractor networks.
· This research is funded through a full doctoral fellowship.

University of Brasilia   January 2014 - December 2014
Research Assistant   *Brasilia, Brazil*

· **Advisor:** *Dr. Euler de Vilhena Garcia*
· **Description:** Designed an ultrasonic transcutaneous energy transfer system for the wireless charging of subcutaneous insulin infusion systems.

University of Dundee   May 2013 - September 2013
Research Assistant   *Dundee, United Kingdom*

· **Advisor:** *Dr. Kazem Dastoori*
· **Description:** Designed and implemented an inductive transcutaneous energy transfer system for the wireless charging of electronic pills.

University of Brasilia	January 2011 - May 2011
Research Assistant	*Brasilia, Brazil*

- **Advisor:** *Dr. Fabio Macedo Mendes*
- **Description:** Long-term financial time series forecasting using Gaussian processes in Python.

PROFESSIONAL EXPERIENCE

University of Brasilia, Laboratory of Biomedical Engineering	January 2015 - July 2015
Research Engineer	*Brasilia, Brazil*

- Organized and oversaw administrative aspects of the laboratory such as ordering laboratory supplies, troubleshooting equipment and software, processing data, and assisted other members of the laboratory with experimental setup, data collection, and analysis.
- Designed a circuit for real-time hepatic bioimpedance measurement of a radiofrequency ablation device for surgical hepatocellular carcinoma treatment.

University Hospital of Brasilia, Division of Clinical Engineering	January 2014 - June 2014
Biomedical Engineer Intern	*Brasilia, Brazil*

- Conducted the inventory of medical equipment and supportive assets at several hospital sectors.
- Supervised corrective and preventive maintenance of medical equipment at several hospital sectors.

PUBLICATIONS

Diniz, E., Ibrahim, T., & Aizenstein, H. (2022). Spike-Coding Attractor Networks for the Short-Term Storage and Memory Consolidation of Temporal Sequences. *In Preparation.*

Diniz, E., Sun, M., & Mao, Z.-H. (2022). Network Mechanism of Bistability Behind Slow Oscillations During Slow-Wave Sleep. *To be submitted.*

Diniz, E., Karim, H., Santini, T., Aizenstein, H., & Ibrahim, T. (2021). Image-to-image translation of 3T to 7T MRI using Generative Adversarial Networks: A step towards longitudinal harmonization. Paper presented at the Proceedings of the 30th Annual Meeting & Exhibition ISMRM & SMRT.

Dastoori, K., **Diniz, E. J. S.**, & Kolhe, M. (2015). Transcutaneous transfer energy system designing for electronic pills. Measurement, 70, 129-136.

FELLOWSHIPS AND AWARDS

- **Dean's Fellowship**, University of Pittsburgh, 2018-2019.
- **Full Doctoral Fellowship**, Science Without Borders Program, Brazilian National Council for Scientific and Technological Development (CNPq), 2015-2019.
- **Best Student Award**, Class of 2014, Electronics Engineering, University of Brasilia, 2015.
- **Visiting Research Student Fellowship**, Science Without Borders Program, Brazilian National Council for Scientific and Technological Development (CNPq), 2013.

TEACHING AND MENTORING EXPERIENCE

- **Co-Mentor**, B.S. Student, Department of Bioengineering, University of Pittsburgh, Jessie Rindfleisch (2021). *Project:* Structural MRI Data Harmonization.

- **Co-Advisor**, Research-Track M.S. Student, Department of Electrical & Computer Engineering, University of Pittsburgh, Valentin Paquin (2018). *Thesis:* Mean-field analysis for model-based spiking networks. *First employment:* BI Consulting France.

- **Co-Instructor**, Department of Electrical & Computer Engineering, University of Pittsburgh, Spring 2018. *Course:* ECE 3695, Deep Learning.

- **Co-Instructor**, Department of Electrical & Computer Engineering, University of Pittsburgh, Fall 2017. *Course:* ECE 3695, Nonlinear Dynamics.

- **Grader**, Department of Electrical & Computer Engineering, University of Pittsburgh, Fall 2016. *Course:* ECE 2646, Linear System Theory. *Responsibilities:* graded homework assignments.

- **Teaching Assistant**, School of Engineering, University of Brasilia, Fall 2014. *Course:* Circuits and Electronics 1. *Responsibilities:* produced video lectures to supplement lecture materials and supervised and assisted in 2-hour experimental laboratory sessions.

- **Teaching Assistant**, School of Science & Engineering, University of Dundee, Fall 2013. *Course:* Control & Dynamical Systems II. *Responsibilities:* supervised and assisted in 3-hour computer laboratory sessions.

- **Guest Lecturer**, School of Engineering, University of Brasilia, November 2012. *Course:* Control Systems, "System Modeling 1".

- **Teaching Assistant**, School of Engineering, University of Brasilia, Spring 2011. *Course:* Experimental Physics 1. *Responsibilities:* held weekly office hours, graded assignments, and supervised 2-hour experimental laboratory sessions.

PROGRAMMING SKILLS

Computer Languages	Python, Typescript, C, MATLAB
Frameworks	PyTorch, React
Databases	PostgreSQL
Tools	Git, Vim