# Elohim Fonseca dos Reis

*Curriculum Vitae*

## PERSONAL DETAILS


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| *Address* | Department of Mathematics<br>Mathematics Building, 129<br>State University of New York at Buffalo<br>Buffalo, NY, USA |
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## EDUCATION

**PhD in Mathematics** 2019-present

State University of New York at Buffalo, New York - United States

Title: "Epidemic Spreading in Temporal Networks"

Advisor: Naoki Masuda

**PhD in Engineering Mathematics** 2018-2019

University of Bristol, Bristol - United Kingdom

Title: "Epidemic Spreading in Temporal Networks"

Advisor: Naoki Masuda

**PhD in Physics** 2016-2017

State University of Campinas (Unicamp), São Paulo - Brasil

Title: "Dynamics, Evolution and Adaptation on Complex Networks"

Advisor: José Antônio Brum

Co-supervisor: Marcus Aloízio Martinez Aguiar

**Masters in Physics** 2013-2015

State University of Campinas (Unicamp), São Paulo - Brasil

Title: "Criticality in Neural Networks"

Advisor: José Antônio Brum

Co-advisor: Marcus Aloízio Martinez Aguiar

**Bachelor in Physics** 2007-2011

State University of Campinas (Unicamp), São Paulo - Brasil

## WORK EXPERIENCE

**Internship in risk management consulting** 2011

Accenture

Development and testing of new business processes, assistance in the implementation of activities related to new solutions, risk mapping.

**Credit risk model analyst** 2011-2012

Itaú Unibanco Bank
Validation of credit risk models (PD, LGD, EAD, etc.) and of RAROC calculators.

## TEACHING EXPERIENCE

**Teaching assistant and grader** Fall 2021
State University of New York at Buffalo
Introduction do Differential Equations

**Instructor** Summer 2021
State University of New York at Buffalo
College Calculus 3

**Teaching assistant** Spring 2021
State University of New York at Buffalo
College Calculus 2

**Grader** Spring 2021
State University of New York at Buffalo
Network Theory

**Grader** Fall 2020
State University of New York at Buffalo
Mathematical Analysis for Management

**Grader** Fall 2020
State University of New York at Buffalo
Introduction to Differential Equations

**Grader** Summer 2020
State University of New York at Buffalo
College Calculus 2

**Teaching assistant and grader** Spring 2017
State University of Campinas
General Physics II

**Teaching assistant and grader** Fall 2016
State University of Campinas
General Physics II

**Teaching assistant and grader** Spring 2016
State University of Campinas
Physics Laboratory I

**Teaching assistant** Fall 2015
State University of Campinas
Structure and Properties of Materials

## CONFERENCE PRESENTATIONS

- Elohim Fonseca dos Reis, Aming Li, Naoki Masuda.
  Interacting human dynamics as a mixture of Poisson processes
  Northeast Regional Conference on Complex System
  Buffalo, NY (online), 1-3 April, 2020.
  (Oral presentation)

- Elohim Fonseca dos Reis, Aming Li, Naoki Masuda.
  Human dynamics as mixture of Poisson processes
  International School and Conference on Network Science (NetSci-X)
  Tokyo, Japan, 20-23 January, 2020.
  (Poster presentation)

- Elohim Fonseca dos Reis, Mark Viney, Naoki Masuda.
  Network structure of wild and laboratory mice immune states
  International Joint Conference on AI & Data Science: Mathematics and Applications
  Suwon, Korea, 4-5 November, 2019.
  (Oral presentation)

- Elohim Fonseca dos Reis, Mark Viney, Naoki Masuda.
  Network structure of wild and laboratory mice immune states
  Threshold Networks
  Nottingham, UK, 22-24 July, 2019.
  (Poster presentation)

- Elohim Fonseca dos Reis, Mark Viney, Naoki Masuda.
  Immune state networks of wild and laboratory mice
  10th International Conference on Complex Networks (COMPLENET'19).
  Tarragona, Spain, 18-19 March, 2019.
  (Oral presentation)

## PUBLICATIONS

### Preprint

- Reis, E. F.; M.; Masuda, N. *Metapopulation models imply non-Poissonian statistics of interevent times*. Preprint: arXiv:2106.10348, 2021.

### Refereed Journal Papers

- Reis, E. F.; Viney, M.; Masuda, N. *Network analysis of the immune state of mice*. Scientific Reports, 11(1):1-8, 2021.

- Reis, E. F.; Li, A.; Masuda, N. *Generative models of simultaneously heavy-tailed distributions of interevent times on nodes and edges*. Physical Review E, 102(5):052303, 2020.

- Ezaki, T.; Reis, E. F.; Watanabe, T.; Sakaki, M.; Masuda, N. *Closer to critical resting-state neural dynamics in individuals with higher fluid intelligence*. Communications biology, 3(1):1-9, 2020.

- Valine, F.; Barea, L.; Reis, E. F.; Von Zuben, A. A.; Frateschi, N.C. *Induced Optical Losses in Optoelectronic Devices due Focused Ion Beam Damages.* Journal of Integrated Circuits and Systems, 7:87-91, 2012.

**Conference proceedings**

- Valine, F.; Barea, L. A. M.; Reis, E. F.; Von Zuben, A. A. G.; Frateschi, N. C.. *Analysis of Focused Ion Beam Damages in Optoelectronic Devices Fabrication.* In: 26th 26th SBMICRO Chip on the Clifs, 2011, João Pessoa PB Brazil. ECS Transactions - Microelectronics Technology and Devices - SBMICRO 2011. Pennington NJ: The Electrochemical Society, 2011. v. 39. p. 299-303.

## FELLOWSHIPS AND SCHOLARSHIPS

**Doctoral Dissertation Fellowship** Spring 2022
State University of New York at Buffalo

**MacGillivray Scholarship** Summer 2021
State University of New York at Buffalo

**Masters research fellowship - FAPESP** 2014-2015
École Normale Supérieure - Paris
Title: Modeling study of criticality in neural networks
Advisor: Thierry Mora

**Undergraduate research fellowship - FAPESP** 2010-2011
State University of Campinas
Title: Fabrication and characterization of InGaAsP/InP microdisk resonators with platinum bridges by focused ion beam system (FIB)

**Undergraduate research fellowship - CNPq** 2009-2010
State University of Campinas
Title: Fabrication and characterization of InGaAsP/InP microdisk lasers
(Honorable mention, PIBIC/CNPq Conference)

## GRANTS

09/2016–03/2017
University of Bristol, UK
EPSRC Institutional Sponsorship
Project title: Phase Transitions in Neuroimaging Data
Amount: £7,234
Role: Co-I (PI: Naoki Masuda, University of Bristol, UK)

## MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- Society for Industrial and Applied Mathematics (SIAM)
- SIAM student chapter at SUNY at Buffalo

## EXTRA-CURRICULAR COURSEWORK

- *Summer School on Physics and Neuroscience*, International Institute of Physics - UFRN (2014);
- *Introduction to C programming language*, CENAPAD-SP (2014);
- *Introduction to MPI*, CENAPAD-SP (2014);
- *Introduction to OpenMP*, CENAPAD-SP (2014);
- *Credit Scoring*, Fundação Getúlio Vargas SP (2011);
- *SAS Programming Fast Track*, SAS Institute Brasil Ltda. (2011);
- *Credit Risk Management*, Siacorp (2011);
- *Why Finance Matters*, Accenture (2011);
- *Fundamental Process Analytics – Lean Six Sigma*, Accenture (2011);

## SKILLS

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| *Languages* | Portuguese (fluent)<br>English (fluent)<br>Italian (intermediate)<br>French (basic) |
| *Programming* | C, Python, Matlab, LaTeX, SAS |