

# Daniel Augusto Ramos

Fortaleza, Ceará, Brazil

☎ +55 (85) 99772-1753 | ✉ dani@spectral.space | 📄 ramosmd | 🌐 https://spectral.space/ | 📱 spectralsdani

## Education

### M.Sc. in Computer Science

Fortaleza, Brazil

UNIVERSIDADE FEDERAL DO CEARÁ (UFC) UNDER PROF. JOÃO PAULO PORDEUS AND PROF. CÉSAR LINCOLN

Feb. 2018 - Sep. 2020

- Defended with a cumulative score of 9.22 (out of 10)
- Focused on Gaussian processes models. In particular, sample-efficient deterministic approximations for flexible Bayesian GPLVM and alternative deep Gaussian process models based on locally linear projections with focus on more interpretability and non-stationary behaviour.
- Master's degree dissertation: *Contributions on latent projections for Gaussian process modeling*

📄 URL

### B.Sc. in Computer Science

Fortaleza, Brazil

UNIVERSIDADE FEDERAL DO CEARÁ (UFC)

Apr. 2013 - Aug. 2017

- Graduated with a cumulative score of 8.86 (out of 10)
- Took elective classes related to formal logic, formal software verification, number theory and neural networks.

### Undergraduate exchange program

Bellingham, WA, US

WESTERN WASHINGTON UNIVERSITY (WWU)

Fall 2015 - Spring 2016

- Finished with a cumulative GPA of 3.3 (out of 4)
- Took robotics related classes with a focus on embedded IA programming
- Alongside the computer science classes, I also took abstract algebra and graph theory at the math department.
- Funded by the Brazil Scientific Mobility Program award from the Federal Government of Brazil

## Publications

### Evaluation of Data Based Normal Behavior Models for Fault Detection in Wind Turbines

📄 ArXiv

AUTHORS: DANIEL AUGUSTO R. M. A. DE SOUZA, DIEGO MESQUITA, CÉSAR LINCOLN C. MATTOS AND JOÃO PAULO P. GOMES

Apr. 2021

- To appear in: **24th International Conference on Artificial Intelligence and Statistics (AISTATS)**
- In this article, we investigated the unscented transformation as a parameter-less alternative to Gauss-Hermite quadrature and Monte Carlo integration for arbitrary kernel Gaussian process latent variable models. We illustrate the applicability of our method with experiments on dimensionality reduction and multistep-ahead prediction with uncertainty propagation.

### Evaluation of Data Based Normal Behavior Models for Fault Detection in Wind Turbines

📄 DOI

AUTHORS: DANIEL AUGUSTO R. M. A. DE SOUZA, THIAGO DE P. VASCONCELOS, CÉSAR LINCOLN C. MATTOS AND JOÃO PAULO P.

Oct. 2019

GOMES

- Published in: **8th Brazilian Conference on Intelligent Systems (BRACIS)**
- Part of the joint project with Delfos Intelligent Maintenance.
- In this article, we propose that models for fault detection should use more specific metrics instead of just regression metric. To support our argument, we evaluated various normal behaviour models and analysed the results by root mean squared error and another task-specific metric.

### No-PAS-BO: Normalized Portfolio Allocation Strategy for Bayesian Optimization

📄 DOI

AUTHORS: THIAGO DE P. VASCONCELOS, DANIEL A. R. M. A. DE SOUZA, CÉSAR L. C. MATTOS AND JOÃO P. P. GOMES

Nov. 2019

- Published in: **IEEE 31st International Conference on Tools with Artificial Intelligence (ICTAI)**
- Part of the joint project with Delfos Intelligent Maintenance.
- I helped the main author with the technical aspects of the experimental section of the paper, mostly related with computer infrastructure and code.

## Teaching Experience

### Graduate teaching assistant: Machine Learning

Fortaleza, Brazil

UNIVERSIDADE FEDERAL DO CEARÁ (UFC)

- Assisted students for the second semester of 2019 on the class Machine Learning. This included meetings, online support and lecturing.

## Funded undergraduate teaching assistant: Theory of Computation

Fortaleza, Brazil

UNIVERSIDADE FEDERAL DO CEARÁ (UFC)

Mar. 2017 - Aug. 2017

- Assisted students for the second semester of 2017. This included meetings, online support and exercise grading.
- During this period a software using web technologies to various simulators was developed in order to help students test and program in various different models of computation.

## Undergraduate teaching assistant: Introduction to Logic

Fortaleza, Brazil

UNIVERSIDADE FEDERAL DO CEARÁ (UFC)

Aug. 2014 - Aug. 2015

- Assisted students for the second semester of 2014 and first semester of 2015 on the class Introduction to Logic. This included meetings and online support.

## Honors & Awards

---

- 2019 **Travel grant**, BRACIS presentation - UFC
- 2018 **Scholarship**, M.Sc. Scholarship - FUNCAP [Declined]
- 2018 **Scholarship**, M.Sc. Scholarship - Fundação CAPES/CNPq [Declined]
- 2015 **Scholarship**, Brazil Scientific Mobility Program - Fundação CAPES/CNPq
- 2015 **Travel grant**, NAT@Logic and 10th LSFA
- 2014 **ICPC - National 42nd Place**, International Collegiate Programming Contests - Brazilian National phase
- 2014 **ICPC - Regional 1st Place**, International Collegiate Programming Contests - Brazilian Regional phase
- 2014 **Scholarship**, Institutional Scientific Initiation Scholarship Program (PIBIC) - Fundação CAPES
- 2013 **Scholarship**, Jovens Talentos para a Ciência - Fundação CAPES

## Experience

---

### Delfos Intelligent Maintenance

Fortaleza, Brazil

GRADUATE PART-TIME RESEARCHER

May 2019 - Sep. 2020

- Joint project between Universidade Federal do Ceará, Delfos Intelligent Maintenance and Fundação ASTEF. Funded by Delfos Intelligent Maintenance.
- Researched machine learning models for fault detection and process monitoring for wind turbines and hydroelectric plants.

### GreenMile LLC

Fortaleza, Brazil

JUNIOR SOFTWARE ENGINEER

Aug. 2017 - Sep. 2018

- Worked on the DevOps team, developing and maintaining internal tools for product support and software delivery in Python, Node.JS and React.
- After being transferred to the Architecture and Microservices team, I focused on dockerizing old microservices and setting up them on Amazon's ECS.
- Alongside these projects, a practical Bayesian model was developed and implemented as a microservice in Java and Stan.

### Deals Only WebStore

Bellingham, WA, US

SUMMER INTERN

Jun. 2016 - Jul. 2016

- Refactored and optimized legacy PHP and Javascript code related to the shop front-end and internal staff tooling.
- Studied various E-commerce platform's sandboxing APIs and tried to integrate them to existing systems.

### Undergraduate research assistant (Universidade Federal do Ceará)

Fortaleza, Brazil

LOGIA (GROUP OF LOGIC AND ARTIFICIAL INTELLIGENCE) ADVISED BY PROF. CARLOS BRITO

Sep. 2013 - Sep. 2015

- Researched about Shannon's classical information theory and how it plays with physical systems.
- After this first project, our focus shifted to connections between kinds of typed lambda calculi with logic systems and how proof assistants can help mathematicians and computer scientists.

## Skills

---

- Programming** Python, C++, Java, SQL, Git, Bash.
- Scientific packages** Tensorflow, JAX, Julia, Stan
- Languages** Native Portuguese, proficient English (TOEFL iBT: 110) and basic Japanese

## Community Service

---

### Computer Science's Academic Week (SAC) XIV

*Fortaleza, Brazil*

TITLE: A VIRUS FOR POKÉMON RED

*Aug. 2019*

- Presented a talk for high school and first year college students on computer security.

### Tutoring for the International Collegiate Programming Contests

*Fortaleza*

*2013 - 2015*

- Tutored first year students about programming in C, data structures, and competitive programming.

## Talks and Presentations

---

### 2019 LOGIA Machine Learning study group

*Fortaleza, Brazil*

*2019*

- Part of a weekly colloquium organized by the LOGIA Machine Learning group with students from Universidade Federal do Ceará, Universidade Estadual do Ceará, and Instituto Federal do Ceará.
- Presented talks on: Unscented Gaussian Process Latent Variable Model, Gaussian Process Latent Variable Model for fault diagnosis, the lottery ticket hypothesis, and Sparse Gaussian Processes and Deep Gaussian Processes.

### Workshop on Philosophy and Information Theory - WLOGIA II

*Fortaleza, Brazil*

TITLE: DOLPHIN COMMUNICATION AND INTELLIGENT SIGNALS

*Mar. 2015*

- Part of a workshop organized by research groups LOGIA (Computer Science department) and PenCogLing (Philosophy department).