

Daniel Augusto Ramos

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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.

LOGIA (Group of Logic and Artificial Intelligence)

Fortaleza, Brazil

UNDERGRADUATE TEACHING ASSISTANT ADVISED BY PROF. ANA TERESA

Mar. 2017 - Aug. 2017

- Assisted students for the second semester of 2017 on the class Theory of Computation. This included meetings, on-line help 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 formalisms.
- Alongside with these activities, a corpus of solutions for selected exercises was expanded for the purpose of helping new lectures in this course to pick exercises for their students.

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.

LOGIA (Group of Logic and Artificial Intelligence)

Fortaleza, Brazil

UNDERGRADUATE RESEARCH ASSISTANT 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.

Education

UFC (Universidade Federal do Ceará)

Fortaleza, Brazil

M.S. IN COMPUTER SCIENCE

Feb. 2018 - Sep. 2020

- Researched Gaussian processes under Prof. João Paulo Pordeus and Prof. César Lincoln
- 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.

UFC (Universidade Federal do Ceará)

Fortaleza, Brazil

B.S. IN COMPUTER SCIENCE

Apr. 2013 - Aug. 2017

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

WWU (Western Washington University)

Bellingham, WA, US

EXCHANGE PROGRAM

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

Contributions on latent projections for Gaussian process modeling

 [URL](#)

AUTHORS: DANIEL A. R. M. A. DE SOUZA

Sep. 2020

- Master's degree dissertation
- In this dissertation, I presented two new proposals for Gaussian process models.
- First, an extension to the Bayesian GPLVM variational inference where I adopt the unscented transformation to solve non-analytic Psi-statistics for arbitrary kernels. This method is compared against Gauss-Hermite quadrature and Monte Carlo integration.
- Finally, I proposed a new deep Gaussian process based on previous literature on Bayesian learning of the hyperparameters of the Mahalanobis distance kernel. This new model is constructed by composition through the hyperparameters of each layer's kernels instead of composing the output of a layer into the input of another. This model supports variational inference and was evaluated against doubly stochastic DGP.

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

 [DOI](#)

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

Oct. 2019

- Published in: 2019 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: 2019 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.

Skills

Desktop programming Kotlin, Python, Tensorflow, C++, Java, Stan, SQL, Git, Bash.

Web programming PHP, Javascript, React and jQuery

Languages Native Portuguese, proficient English (TOEFL iBT: 110) and basic Japanese

Honors & Awards

2015 **Scholarship**, Brazil Scientific Mobility Program - Fundação CAPES/CNPq

2014 **42nd Place**, ICPC - Brazilian National phase

2014 **1st Place**, ICPC - Brazilian Regional phase

2013 **4th Place**, ICPC - Brazilian Regional phase

2013 **Scholarship**, Jovens Talentos para a Ciência - Fundação CAPES

Extracurricular Activity

GEMP (ICPC Study Group)

[Fortaleza](#)

MEMBER AND INSTRUCTOR

2013 - 2015

- Participated on two regional and one national phases of the ICPC (International Collegiate Programming Contests)
- Taught first year students about programming for contests.