

JHONATAN DA PONTES LOPES

PHD | SOFTWARE ENGINEER | DATA SCIENTIST

CONTACT

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drjplopes.com

ABOUT ME

I'm a problem solver with an expertise in computational solid mechanics and medical devices. I'm fascinated by the development and implementation of numerical methods and algorithms, from the modelling of complex mathematical phenomena to end-user software development.

ROLES

SOFTWARE ENGINEER / DATA SCIENTIST

REG METRICS, 2022 -

- Built an automated parser to extract information from PDFs.
- Built a Django backend to recommend appropriate standards and test houses for users based on the legislation that their project must adhere to.
- Implemented CI automations on company's repositories.
- Managed a team of two.

SOFTWARE ENGINEER - OXHOME PROJECT

DEPT. OF ENGINEERING SCIENCE, UNIVERSITY OF OXFORD 2021

- Collaborated on smart mouthguard's firmware to implement BLE/Serial communication functionality using C.
- Built an automated test suite in Python for performing system testing of device's firmware.
- Built a Python client to extract data from the smart mouthguard.
- Implemented Jira ticketing system.
- Performed risk management and analysis.

POSTDOCTORAL RESEARCHER IN PROSTHETIC TECHNOLOGY

DEPT. OF ENGINEERING SCIENCE, UNIVERSITY OF OXFORD 2020 - 2021

- Implemented PDE algorithms to estimate power and efficiency of Tesla Turbines under different inputs for design iterations.
- Designed and optimised a Tesla turbine for power extraction using analytical modelling and Computational Fluid Dynamics.
- Performed analysis of computational and experimental data.
- Built an automation software in LabVIEW for controlling the hardware on a bespoke test bench for assessing Tesla turbine performance.

DOCTORAL RESEARCHER

DEPT. OF ENGINEERING SCIENCE, UNIVERSITY OF OXFORD 2017 - 2020

- Performed analysis of simulation data.
- Developed a novel algorithm for a marching in time solution of orthogonal frictional contacts.
- Developed an idealised analytical model for the frictional contact of a bolted joint.

COMPUTING DEMONSTRATOR

DEPT. OF ENGINEERING SCIENCE, UNIVERSITY OF OXFORD 2017 - 2020

- Responsible for demonstrating procedures, helping with debugging, and teaching programming practices in the computing laboratory for first year undergraduates in Engineering (P5 paper) using MATLAB software.

ACADEMIC QUALIFICATIONS

ENGINEERING SCIENCE PHD

2017 - 2020 | University of Oxford - UK

MECHANICAL SCIENCES MSC

2015-2016 | University of Brasilia - Brazil

MECHANICAL ENGINEERING BSC

2009-2014 | University of Brasilia - Brazil

MECHANICAL ENGINEERING BSC (EXCHANGE PROGRAM)

2012-2013 | Rice University - Houston, TX, USA

SELECTED PUBLICATIONS

JP LOPES, DA HILLS. The axisymmetric shrink fit problem subject to torsion. International Journal of Engineering Science, v. 150, 2020

JP LOPES, DA HILLS. An idealised description of the frictional receding contact behaviour of a bolted joint. European Journal of Mechanics - A/Solids, v. 83, 2020.

JP LOPES, DA HILLS. The axisymmetric frictional receding contact of a layer pressed against a half-space by a point force. International Journal of Solids and Structures, v. 171, p. 47-53, 2019.

JP LOPES, DA HILLS. Ring cracks at the surface of a half-space. Engineering Fracture Mechanics, v. 194, p. 105-116, 2018.

JP LOPES, L MALCHER. Fatigue life estimates under non-proportional loading through continuum damage evolution law. Theoretical and applied fracture mechanics, v. 88, p. 64-73, 2016.

SELECTED GRANTS AND HONOURS

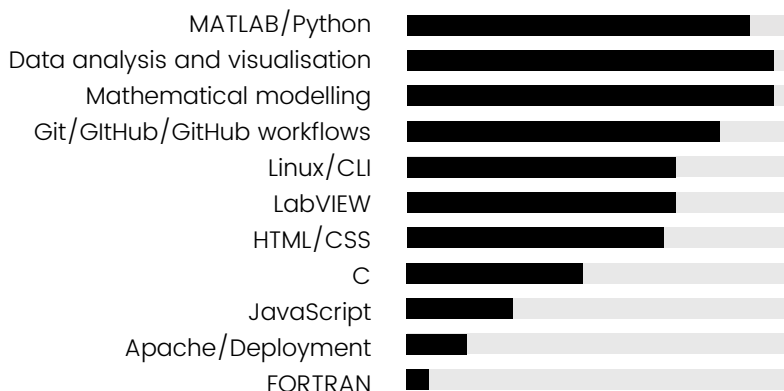
Full doctorate Scholarship - Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) | 2017 - 2020

Rolls-Royce PLC Scholarship - University of Oxford | 2017 - 2020

Sir John Aird Scholarship, Christ Church - University of Oxford | 2017 - 2020

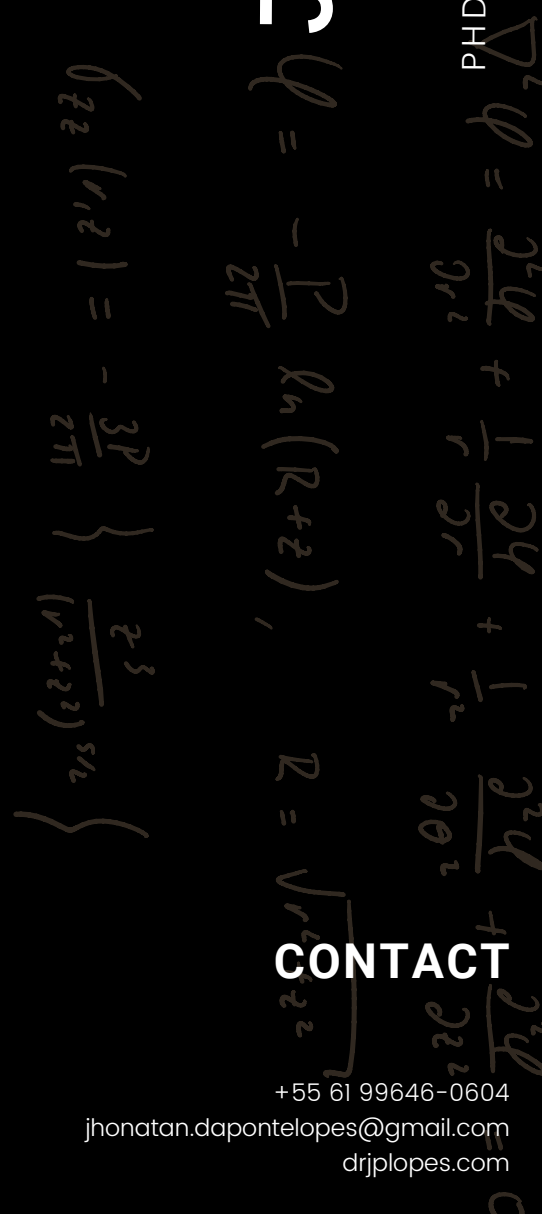
Best Student - BSc in Mechanical Eng. - Class of 2/2014 - University of Brasilia | 2015

SKILLS



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