Edgard Moreira Minete, M.Sc.

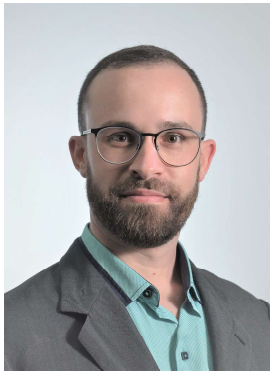
Nationality: Brazilian, Italian

Webpage: edgmin.github.io

Address: Johannisstr. 79, 90419, Nürnberg, Germany

E-mail: edgardmminete@gmail.com

Phone: (+49) 0174 8005375



Education

10.2017 - 09.2021 **M.Sc. in Computational Sciences in Engineering**, *TU Braunschweig*, Germany
Focus: Numerical methods, machine learning, fluid dynamics

03.2010 - 07.2017 **B.Sc. in Mechanical Engineering**, *UFES*, Brazil
Focus: Technological control of industrial processes

Research Experience

01.2022 - Ongoing **Research Assistant**, *LGT - Friedrich-Alexander University*, Germany
- Translation from TensorFlow to PyTorch and further development of a neural network to solve the highly nonlinear inverse problem of predicting stress-strain curves and mechanical properties of aluminum alloys from multi-fidelity simulation and experimental depth-sensing indentation data

11.2019 - Ongoing **Research Assistant**, *IfN - TU Braunschweig*, Germany
- Implemented a corruption & adversarial attack tool and an SNR/PSNR-based Gaussian noise generator for assessing the robustness of semantic segmentation deep neural networks (DNNs)
- Improved an existing approach for domain mismatch estimation by exploiting multitask learning (with generative models and autoencoders) and distinct reconstruction losses
- Extensively trained and evaluated diverse semantic segmentation DNNs (ERFNet, DeepLabv3+ SwiftNet, ENet) on a remote GPU cluster

07.2018 - 12.2021 **Research Assistant**, *ifs - TU Braunschweig*, Germany
- X-ray computed tomography data acquisition and processing with Python and Matlab
- Advanced analysis and processing of 3D welding mesh data with discrete differential geometry and smoothing techniques using Matlab
- Developed a Matlab application for the segmentation and measurement of weld beads
- Implemented DFLUX subroutines with Abaqus FEA solver to investigate multifocal aluminum beam welding

10.2020 - 09.2021 **Visiting Researcher**, *CV & AI Group - TU Munich*, Germany
- Helped to develop a methodology for systematizing the understanding and design process of DNNs
- Mapped 20 design solutions for recurring problems in the design process of DNNs
- Developed a state-of-the-art unsupervised deep domain adaptation approach for the VisDA-2017 image dataset

Teaching Experience

10.2021 **Guest Lecturer**, *Multivix College*, Brazil
Presented a lecture in computational fluid mechanics for undergraduate students

05.2010 - 07.2010 **Monitor**, *IFES*, Brazil
Led the welding lab practices for a cohort of 20 undergraduate students

Fellowships and Grants

07.2013 - 09.2014 **Science Without Boarders**, *Capes/Brazilian government*
€ 870.00/month for 15 months, € 1,320.00 setting-in allowance, and $ 3,412.00 travel allowance

Further Education

07.2013 - 08.2014 **Study Abroad**, *WH Zwickau*, Germany
3 semesters as a visiting student of the Automotive Engineering and Management course at graduate level

03.2009 - 12.2010 **Mechanical Training**, *IFES*, Brazil
Focus: Technological control of industrial processes

Employment History

12.2015 - 07.2017 **Internship**, *Tecvix DI*, Brazil
Finite Element and Finite Volume simulations of centralizers and sucker rod pumps

09.2014–02.2015 **Internship**, *Audi AG*, Germany
Helped in the execution of robotic resistance welding of steel alloys, destructive testing, preparation and execution of metallographic inspection

Computer Skills

Programming Python, Matlab, C/C++, LaTeX, Bash, Fortran

Frameworks PyTorch, TensorFlow (Keras)

Others Remote GPU cluster computations, Git, Jupyter Notebook, OpenFoam, Ansys Fluent, Ansys CFX, Microsoft package

Communication Skills

Portuguese	Native speaker
English	Professional working proficiency (C1)
German	Professional working proficiency (C1)
Italian	Elementary proficiency (A2)