Helder Cesar Rodrigues de Oliveira

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Ph.D. and M.Sc. in Electrical Engineering / B.Sc. Computer Science

I am a highly motivated person, team worker which likes challenges and mentoring people translating technical/abstract concepts in a simpler way. Currently, I am a postdoc at the University of Calgary working with Bayesian networks. My background is in image processing and computer vision using medical imaging (mammography and digital breast tomosynthesis), where I applied several machine learning, image processing and computer vision methods. I love coding to solve real-life problems and help people. My work with mammography aimed to detect a lesion called "architectural distortion of the breast", a very sublet sign of what could become breast cancer. I also worked with denoising filters (BM3D, NLM) to remove spared noise when the mammography is acquired with a low radiation dose. I have experience with several packages/languages for the Python language as well as MATLAB and R.

Education

University of Calgary, Canada   **2019-Present**

Postdoctoral fellow

Developed research with Bayesian networks, time-series (ARIMA models), Granger causality.

University of São Paulo, Brazil   **2016-2019**

Ph.D. in Electrical Engineering (WES Canadian equivalent: Doctorate degree)

Worked with image processing, machine learning and computer vision techniques applied to medical imaging (digital mammography and digital breast tomosynthesis) to detect a lesion called architectural distortion of the breast.

University of São Paulo, Brazil   **2014-2015**

M.Sc. in Electrical Engineering (WES Canadian equivalent: Master's degree)

Worked with denoising methods (e.g. NLM and BM3D) in medical imaging (digital mammography and digital breast tomosynthesis) to reduce the noise of images acquired with low radiation dose.

São Paulo State University, Brazil   **2009-2013**

Bachelor's in Computer Science (WES Canadian equivalent: Bachelor's degree - four years)

Worked with image processing and machine learning techniques to automatic optical character recognition.

Work Experience

University of Calgary, Canada   **2021**
Co-instructor
Coordinate the course "Fundamentals of Biometric Systems Design", at the Schulich School of Engineering (SSE), along with the instructor (Dr. Svetlana Yanushkevich). I developed the assignments in Python language (before was in MATLAB), advised the students, gave some of the classes and mark the programming assignments.

University of São Paulo, Brazil   **2014-2019**
Teaching Assistant (TA)
I was TA in several courses over the years: "Digital Medical Image Processing"; "Introduction to Computer Vision"; "Fundamentals of Medical Imaging"; "Numerical Methods"; "Probability I", and; "Digital Radiological Images". My responsibilities included giving some classes and marking assignments and tests.

Volunteer

Mentor (2021) at the "Alberta Innovates Highschool Youth Researcher Summer" (HYRS) Program. I mentored high school students to expose/engage them in the research we were working on the BTLab at the University of Calgary. I was responsible for weekly meet these students providing guidance and answering questions.

Reviewer (2020) at the "4th Annual Graduate Research Symposium - Peer Beyond 2020" held at the University of Calgary.

Mentor (2019) at the "Technovation Summer School" held at the University of São Paulo (Brazil). I mentored elementary school students (9-11 yo) to develop a mobile app for the "Technovation Challenge" competition.

Skills

Python	MATLAB	LaTeX
Pandas	Matplotlib	C/C++
Tensorflow/Keras	R	Qt
Scikit-Image/Scikit-Learn	Java	OpenCV
Statsmodels	Scipy	Jupyter Notebook
NumPy	Pillow	PyAgrum
SQL	Git/Github	Spyder/Visual Studio Code

Calgary, December 16, 2021.