Lucas Camponogara Viera

(+886) 0979 235 851 | monteirocamponogara@gmail.com | camponogaraviera | lucas-camponogara-viera-5319871b1

Currently working with Machine/Deep Learning and design of circuit-based quantum processors for Superconducting Quantum Computing. My research interests are mainly in the field of circuit Quantum Electrodynamics and Machine Learning. Notwithstanding, I am always keen to learn about related engineering and technology trends straddling multiple disciplines to enhance research skills and sharpen communication. My work experience include machine learning applied to image processing, computer vision and natural language processing, as well as software development for Bluetooth communication.

Education

National Taiwan Normal University - NTNU

Taipei, Taiwan
2020 – 2023 (Exp.)

- **PhD degree** in electro-optical engineering, focus on quantum computing
- **Subject**: design of transmon-based processors for superconducting quantum computing

Federal University of Santa Maria - UFSM

Santa Maria, RS, Brazil
2017 – 2018

- **B.Sc. degree** in control and automation engineering (incomplete)
- completed 180 credits of complementary coursework in computer science (machine/deep learning)
- **Avg**: 8.04/10

Federal University of Santa Maria - UFSM

Santa Maria, RS, Brazil
2015 – 2017

- **M.Sc. degree** in physics, focus on quantum information
- **Thesis**: distribution and quantum coherence manipulation in multi-qudit systems
- **Avg**: 7.7/10

Federal University of Santa Maria - UFSM

Santa Maria, RS, Brazil
2011 – 2015

- **B.Sc. degree** in physics, focus on quantum electrodynamics
- **Thesis**: dimensional aspects of photon mass in quantum electrodynamics
- **Avg**: 7.59/10

Professional Experience

Research Internship in Machine Learning Engineering

Institution: national taiwan normal university (ntnu) - taipei, taiwan — *Taipei, Taiwan, Sept. 2019 – Feb. 2020*

- **Subject:** The internship consisted of the development of a Generative Adversarial Network (GAN) with Python, Keras and TensorFlow for the purpose of image deblurring.

Software Engineer

Company: national institute of spatial research (INPE) - santa maria, RS, brazil — *Brazil, July 2017 – January 2019*

- **Subject:** The project consisted of the development of a GUI based automation software in python for research data acquisition through a secure Bluetooth Communication Client-Server Channel.

Awards

RoboWeek Challenge

Federal University of Rio Grande, RS, Brazil
2018

2nd place overall.

Publications

L. V. Camponogara, "Distribution and Quantum Coherence Manipulation in Multi-Qudit Systems," M.S. Thesis, Ctr. of Nat. and Exct. Sciences., UFSM Univ., Santa Maria, RS, 2017.

L. V. Camponogara, "Dimensional Aspects of Photon Mass in Quantum Electrodynamics," B.S. Thesis, Ctr. of Nat. and Exct. Sciences., UFSM Univ., Santa Maria, RS, 2014.

Viera, L. C.; Muralikrishna, P.; Schuch, N. J.; Makita, K., "Study of Ionospheric Plasma in the South Atlantic Geomagnetic Anomaly Region," INPE/CNPq 114397/2011-2, 2012.

Technical Production

Baseline Architectures for Convolutional Denoising Autoencoder

Taipei, Taiwan
2020

- description: machine learning architecture for image denoising with autoencoder neural network developed in python using keras and tensorflow.
- https://camponogaraviera.github.io/Machine-Learning-Engineering/Autoencoder/

Autoencoder - A Comprehensive Guide

Taipei, Taiwan
2020

- description: invited talk on deep learning (2h).
- https://camponogaraviera.github.io/Machine-Learning-Engineering/InvitedTalk/

Red Blood Cell 3D-Surface Triangulation

Taipei, Taiwan
2019

- DESCRIPTION: A PYTHON IMPLEMENTATION OF EVANS, E. A., AND R. SKALAK (1980) RED BLOOD CELL MODEL FOR THE PURPOSE OF HOLOGRAPHIC TOMOGRAPHY.
- HTTPS://CAMPONOGARAVIERA.GITHUB.IO/RED-BLOOD-CELL-3D-SURFACE/

Generator Network for an Image Deblurring GAN Architecture

Taipei, Taiwan
2019

- DESCRIPTION: MACHINE LEARNING ARCHITECTURE FOR IMAGE DEBLURRING WITH A GENERATIVE ADVERSARIAL NETWORK (GAN) FRAMEWORK DEVELOPED IN PYTHON USING KERAS AND TENSORFLOW.
- HTTPS://CAMPONOGARAVIERA.GITHUB.IO/MACHINE-LEARNING-ENGINEERING/GAN/

Logistic Regression Based Facial Expression Recognition

Santa Maria, RS, Brazil
2018

- DESCRIPTION: MACHINE LEARNING ALGORITHM FOR CLASSIFYING HUMAN FACIAL EXPRESSIONS DEVELOPED IN PYTHON USING SCIKIT-LEARN.
- HTTPS://CAMPONOGARAVIERA.GITHUB.IO/MACHINE-LEARNING-ENGINEERING/LOGISTICREGRESSION/

Kinematic Motion Algorithm for a TurtleBot in a Gazebo Environment

Rio Grande, RS, Brazil
2018

- AWARD: SECOND PLACE MEDAL AWARDED FROM A 24H ROBOTICS COMPETITION (ROBOWEEK) AT THE FEDERAL UNIVERSITY OF RIO GRANDE.
- DESCRIPTION: MOTION ALGORITHM DEVELOPED IN C++ FOR A GAZEBO SIMULATOR.
- HTTPS://CAMPONOGARAVIERA.GITHUB.IO/ROBOWEEK-CHALLENGE/

Sentiment Analysis using LSTM and Word2Vec

Santa Maria, RS, Brazil
2018

- DESCRIPTION: MACHINE LEARNING ALGORITHM WITH LSTM AND WORD2VEC DEVELOPED IN PYTHON USING KERAS AND TENSORFLOW FOR INSIGHTFUL TEXT ANALYSIS ON ATTITUDE SENTIMENT EXPRESSED IN A BLOCK OF TEXT.
- HTTPS://CAMPONOGARAVIERA.GITHUB.IO/MACHINE-LEARNING-ENGINEERING/

Autonomous Software for data Acquisition via a Secure Bluetooth Communication Client-Server Channel

Santa Maria, RS, Brazil
2017

- DESCRIPTION: GUI AUTOMATION SOFTWARE DEVELOPED IN PYTHON WITH BLUETOOTH COMMUNICATION FOR SENSOR DATA ACQUISITION.
- PLATFORM: WINDOWS
- HTTPS://CAMPONOGARAVIERA.GITHUB.IO/BLUETOOTH-COMMUNICATION/

Snake Game - MVC Standard

Santa Maria, RS, Brazil
2017

- DESCRIPTION: SNAKE GAME WITH AN INTERACTIVE MENU DEVELOPED IN PYTHON WITH PYGAME ENGINE AND MVC STANDARD.
- PLATFORM: DESKTOP
- HTTPS://CAMPONOGARAVIERA.GITHUB.IO/GAME-DEVELOPMENT/

Supervised Teaching in Quantum Mechanics

Santa Maria, RS, Brazil
2017

- INSTITUTION: FEDERAL UNIVERSITY OF SANTA MARIA
- WORKLOAD: 15H

Technical Skills

- Programming Languages: Python, MATLAB, C, HTML5, CSS.
- Frameworks and Libraries: Tensorflow, Keras, scikit-learn, Qiskit, Cirq, sympy, Pygame, OpenCV.
- Others: Git, Linux, Android Studio, LaTeX .

Languages

- Portuguese (Native); English (ILR Level 4); Spanish (Professional working prof.); German (Elementary prof.); Chinese (Elementary prof.).

Will be pleased to provide references upon request.