SANTIAGO POSSO

spo230@uky.edu | Lexington KY | github.com/sposso

Summary

Physics engineer with a strong background in mathematics and signal processing. Ph.D. student in electrical engineering with the ability to apply deep learning models to solve real-world problems, especially for image classification. Established ability to develop, debug, and modify components of deep learning architectures. Well-developed interpersonal and communication abilities.

Education

University of Kentucky, College of Engineering — Lexington, KY
Ph.D. in Electrical Engineering — *expected in 05/2026*
Master of Science in Electrical Engineering, GPA: 3.75/4 — *12/2023*
Thesis: Nonuniform Sampling-based Breast Cancer Classification
IEEE EMBs WildCats Member, 2022
Relevant Courses: Machine Learning, Bayesian Learning, Image Processing, Multicore Computing

Technological University of Pereira — Colombia
Bachelor of Science in Engineering Physics, GPA: 4.4/5 — *07/2020*
Distinguished student Award Recipient
Young Researcher and innovator Scholarship Recipient
Relevant Courses: Signal Processing, Differential Eq., Statistics, Statistical Mechanics, Classical Mechanics.

Experience

University of Kentucky, College of Engineering — Lexington, KY
Graduate Research Assistant — 01/2021-*Current*

- Project: Nonuniform Sampling-based Breast Cancer Classification
  - ➢ Exploit the relative importance of pixels in images to boost the classification performance of Convolutional Networks.
  - ➢ Parallelization of processes using CUDA.
- Implementation of the code for the paper “Deep Learning to Improve Breast Cancer Classification” in PyTorch.
  - ➢ Ablation of typical Convolutional-based models such as ResNet50.
  - ➢ Fine-tuning of pre-trained models on natural images and Transfer Learning.
  - ➢ Medical image processing at high resolutions.
- Algorithm to retrieve images from the CBIS-DDSM mammogram dataset.
  - ➢ Use of OS library to manipulate image paths in local and remote machines.
  - ➢ Utilization of the DICOM library to load medical images.
  - ➢ Use of SSH protocol.

University of Kentucky, College of Engineering — Lexington, KY
Graduate Teaching Assistant — 01/2021-*Current*

- Instructional assistance in the following courses:
  - ➢ Signal and systems, AC circuits, Design of Logic Circuits.

Technological University of Pereira, College of Engineering — Colombia
Undergraduate Research Assistant — *01/2018-01/2019*

- Project: Breast Cancer classification using SVM
  - ➢ Extraction of morphological features from breast lesions
  - ➢ Utilization of Support Vector Machines to classify breast cancer.

Skills

-Software: PyTorch, Tensorflow, Numpy, Pandas, OS, OpenCV

-Programming Languages: Python, MATLAB, C, Latex.

-Languages: English and Spanish

Publications

[1] Posso Murillo, S., Skean, O., Sanchez Giraldo, L.G. (2024). Non-uniform Sampling-Based Breast Cancer Classification. In: Cao, X., Xu, X., Rekik, I., Cui, Z., Ouyang, X. (eds) Machine Learning in Medical Imaging. MLMI 2023. Lecture Notes in Computer Science, vol 14349. Springer, Cham. https://doi.org/10.1007/978-3-031-45676-3_34