Catalina Gómez Caballero

Email: cgomezc1@jhu.edu

Research Interests

Artificial Intelligence, Computer Vision, Human-AI interaction, Machine Learning, Medical Imaging, Neuroscience.

Education

PhD Student in Computer Science Fall 2020 - present
Johns Hopkins University

M.Sc. in Biomedical Engineering, *cum laude* March 2019
Universidad de los Andes

- Thesis: Automatic Seizure Detection based on imaged-EEG signals through statistical learning. Directed by Mario Valderrama and Pablo Arbeláez

B.S. in Biomedical Engineering, *summa cum laude* October 2017
Universidad de los Andes

- Thesis: Development of a device for electric stimulation to reduce the degree of atrophy in patients with immobilized limbs. Directed by: Juan Carlos Cruz and Mario Valderrama

Achievements

- Intuitive Surgical Best Project Award in the Deep Learning course CS.682, December 2020
- Fulbright Colciencias Scholarship 2019, August 2019
- Project funding by the Vice-Chancellor of Research at Universidad de los Andes, January 2018-present
- Award of Semester Excellence at the Universidad de los Andes for the best GPA of the Department of Biomedical Engineering in 2014

Experience

Universidad de los Andes

Graduate Research Assistant

Automatic Seizure Detection based on imaged-EEG signals 08/2017-12/2019

- Developed and evaluated an algorithm to automatically detect epileptic seizures in brain signals from different databases using Deep Learning

Transient Object Detection and Classification 01/2018-12/2019

- Retrieved a dataset from the catalogs of the Catalina Real-Time Transient Survey. Develop a deep learning algorithm that models spatio-temporal dependencies to classify transient events using image sequences

Biomedical Segmentation in 3D-images 01/2019-08/2020

- Conducted experiments of 3D-models to segment anatomical structures and lesions in different imaging modalities

Petrography Analysis 06/2020-10/2020

- Applied Deep Learning techniques to identify mineral components in thin sections from databases collected by the Colombian Geological Service

Smart Pooling for COVID-19 03/2020-08/2020

- Algorithmic development of an efficient strategy for COVID-19 samples.

Grader 01/2016-05/2017

- Courses: Probability and Statistics I, Circuits and Instrumentation, Signals Processing and Instrumentation

Undergraduate Teaching Assistant 01/2015-05/2017

- Support freshmen in Biomedical Engineering with first level courses (calculus, physics, chemistry) and advise them in academical and personal decisions

Max Planck Institute for Astrophysics

Summer Intern 07-08/2018

- Contributed to the characterization of data from the IllustrisTNG porject to analyze Local Group analogues

Seminars and Courses

SIPAIM 2019 - Oral presentation: Learning to Segment Brain Tumors
Instituto Tecnológico Metropolitano de Medellín, Medellín, Colombia 2019
ICTALS 2019 - Poster presentation Automatic Seizure Detection in Scalp and Intracranial Recordings through Convolutional Neural Networks
International Conference for Technology and Analysis of Seizures, Exeter, England, 2019
Neuroscience 2018 - Poster presentation: Seizure Detection based on "imaged-EEG" signals through statistical learning
Society for Neuroscience, San Diego, 2018
SIPAIM 2017 - Oral presentation: Recognition of skin melanoma through dermoscopic image analysis
Universidad Nacional de Colombia, San Andrés, Colombia 2017

Publications

For a complete list of publications, please visit my Google Scholar Profile

Personal skills

Languages	Spanish (native) English (proficiency) French (beginner)
Programming Languages	Python, MATLAB, Arduino, Minitab, MeshLab, R, LaTeX
Community Service	Fundación con las Manos Bogotá, 02/2018 - 07/2020