

SARA ROJAS MARTÍNEZ

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EDUCATION

- Universidad de los Andes – Colombia** Jan. '13 – Dec. '16
BE in Electronic Engineering
Minor in Biomedical Engineering
Minor in Digital and Analog Electronic Systems
- Universidad de los Andes – Colombia** Jan. '17 – Dec. '18
MSc. Biomedical Engineering
Adviser: Professor Pablo Arbeláez
Thesis Title: Precise Human Pose Estimation Based on 2-dimensional Images for Kinematic Analysis
- King Abdullah University of Science and Technology (KAUST) – Saudi Arabia** Aug. '20 – Aug. '24
PhD. Computer Vision
Adviser: Professor Bernard Ghanem

RESEARCH EXPERIENCE

- **King Abdullah University of Science and Technology (KAUST)** Jul '19 – Dec. '19
Visual Computing Center (VCC) – Image and Video Understanding Lab (IVUL)
Professor Bernard Ghanem
- **University of Southern California (USC)** Jun. '18 – Aug. '18
Institute for Creative Technologies
Biomedical Illustrator/Advisor: Autumn Kulaga

PUBLICATIONS

- . Abdullah Hamdi, **Sara Rojas Martinez**, Ali Thabet, and Bernard Ghanem, “[AdvPC: Transferable Adversarial Perturbations on 3D Point Clouds](#)” held in the European Conference on Computer Vision (ECCV2020)
- . Merey Ramazanova, Chen Zhao, Mengmeng Xu, Humam Alwassel, **Sara Rojas Martinez**, Fabian Caba, and Bernard Ghanem, “[Logistic Regression is Still Alive and Effective](#)”, [The 3rd Workshop on YouTube-8M Large-Scale Video Understanding](#) held in the International Conference on Computer Vision (ICCV 2019)
- . **Sara Rojas Martinez**, Diana Sofía Herrera Valenzuela, and Pablo Arbeláez, “[Precise Human Pose Estimation Based on 2-Dimensional Images for Kinematic Analysis](#)” held in 15th International Symposium on Medical Information Processing and Analysis (SIPAIM 2019)

RESEARCH PROJECTS

- **Undergraduate Level Projects – Universidad de los Andes** Jun. '16 – Dec '16

· “*Recognition of Right Whales of the North Atlantic by Image Processing*”

Professor: Pablo Arbeláez

Description: Participated in a challenge organized by the National Marine Fisheries Service of National Oceanic and Atmospheric Administration to automate the right whale recognition and identification process for the purpose of tracking and monitoring right whales population from aerial images. Mathematical morphology and clustering techniques were employed to extract the characterizing calluses or skin *fingerprint* of each whale followed by a template matching classifier.

· “*EEG Analysis of Cognitive Evoked Potentials in Subjects with Radiofrequency Exposure*”

Professor: Juan Carlos Bohóquez and Mario Valderrama

Description: In this project we want to make a search of effects produced by electromagnetic radiation with a standardized test protocol, in which all the parameters that were taken into account when experimenting are mentioned. In this way, reliable and comparable results can be obtained with other studies that were also equally methodological. However, not only will the subjects be exposed to radiation but to a visual stimulus which will generate a VEP. This VEP describes the flow of information in the visual sensory pathways and, consequently, only changes in the flow of information in RF exposure will be analyzed.

• **Graduate Level Projects – Universidad de los Andes**

Jan. ‘17 – Dec ‘17

· “*AUGANs: Generative Adversarial Networks for Facial Action Unit Detection*”

Professor: Pablo Arbeláez

Description: We propose a novel approach for estimating the statistical data representation of facial expression recognition in order to automatically create labeled images. We follow two different approaches in Generative Adversarial Networks, and evaluate our model by using the standard F1-metric in a supervised classification fashion.

WORK EXPERIENCE

• **Computer Vision Engineer at Barbara & Frick**

May ‘19 – Jun. ‘19

Structuring the first stage of the project which consists of using state-of-the-art algorithms for Colombian branded-product detection in markets to count the quantity and kind of products.

• **Teaching Assistant at Universidad de los Andes**

Jul ‘17 – Jun. ‘19

Courses: Introduction of Electrical and Electronic Engineering, Fundamentals of Circuits, IT in Organizations, and Technology of Ironman

Duties included creating supplementary material to complement course lectures, updating course content, designing lab activities to enhance the learning experience, providing feedback on course projects, as well as participating in student evaluation towards the end of the course

• **ABET Re-accreditation Assistant at Universidad de los Andes**

Jan. ‘17 – Aug. ‘17

Member of the academic committee at the Department of Electrical and Electronic Engineering responsible for presenting statistics on performance measures needed to update the documents required for ABET Re-accreditation

QUALIFICATIONS

- Software Skills: Python, Tensorflow, PyTorch, MATLAB, , Ledit, Verilog, and L^AT_EX
- Technical Electives: Computer Vision and Advanced Machine Learning
- Languages: Spanish (Native or Bilingual Proficiency), English (Professional Working Proficiency)