Edwin Arkel Rios
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Education

National Yang Ming Chiao Tung University Hsinchu, Taiwan
PhD in Electrical Engineering and Computer Science *July 2019 - Present*

- Relevant coursework: Image Processing, Deep Learning, Machine Learning, Applied Computer Vision, Intelligent Fog Computing Systems, Visual Recognition using Deep Learning, Image Manipulation & VFX
- Cumulative GPA: 4.24/4.30

National Cheng Kung University Tainan, Taiwan
Bachelor of Science in Energy Engineering *Sept. 2015 - June 2019*

- Relevant coursework: Signal Processing, Automatic Control, Optimization Design, Numerical Analysis, Introduction to Artificial Intelligence, [Machine Learning, Introduction to Data Science] (Coursera)
- Cumulative GPA: 3.76/4.30

National Taiwan University Taipei, Taiwan
Chinese Language Division Language Center *Aug. 2014 - Aug. 2015*

San Agustin School Panama, Panama
High School Diploma in Science and Arts *Mar. 2011 - Dec. 2013*

Skills

Languages: Spanish (native), English (fluent), Mandarin Chinese (proficient)

Software and programming: Python (NumPy, matplotlib, pandas, sci-kit learn, TensorFlow, Keras, PyTorch), Linux, Git, Bash, MATLAB, C++, OpenCV, SolidWorks, LaTeX

Achievements

2020 Academic Achievement Award during R.O.C. Academic Semester 108-1 and 108-2 *NCTU, Hsinchu*

2018 Outstanding Student during R.O.C. Academic Year 105 and 106 *NCKU, Tainan*

2013 Highest cumulative GPA of Class 2013: 4.53/5.00 *San Agustin School, Panama*

2013 Silver and gold medal in National Physics Olympics *Republic of Panama*

Experience

NYCU's Parallel Computing Systems Lab *July 2019 - Present*

- Research in state-of-the-art for fine-grained image classification, in particular focusing on Vision Transformers (ViTs), using PyTorch, with special emphasis on the trade-off between classification accuracy performance and computational resource cost.
- Researched camera video for bio-signal detection (RPPG) algorithms for facilitation of remote AI-assisted health care. Implement algorithms, perform result analysis and presentation, organize group efforts.
- Conduct literature survey, assessment and exposition, to introduce our team to the state-of-the-art in the field while judging advances made by different research groups across the globe, and also understand the current gaps in the literature to propose promising research directions.
- Prepared a challenging dataset with almost 500K images and more than 3K anime character classes.

Publications

- **Global-Local Similarity for Efficient Fine-Grained Image Recognition with Vision Transformers**.
- **Anime Character Recognition using Intermediate Features Aggregation**. *ISCAS 2022.*
- **IFACD: Intermediate Features Augmented Contrastive Distillation**. *ICLR CSS Workshop 2022.*
- **DLPrPPG: Development and Design of Deep Learning Platform for Remote Photoplethysmography**. *ISCAS 2022.*
- **Parametric Study of Performance of Remote Photoplethysmography System**. *ISCAS 2021.*
- **DAF:RE A Challenging, Crowd-Sourced, Large-Scale, Long-Tailed Dataset for Anime Character Recognition**. Submitted to *ICIP 2021.* Preprint: https://arxiv.org/abs/2101.08674