CRISTOBAL EYZAGUIRRE

Computer Science Ph.D. Student

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RESEARCH EXPERIENCE

Ph.D. Student

Stanford Vision and Learning Lab - Stanford University

📅 September 2021 – Ongoing   📍 Stanford, CA

- **Ongoing:** Combining state-of-the-art unsupervised video models with large-scale image recognition models for scene understanding from egocentric video datasets.
- **Under Review (CVPR2023):** Proposed benchmarks, metrics and models for a novel task at the intersection of online video and language.
- **Oral (CVPR2022):** We characterized the degree to which video understanding can be addressed from only image semantics. The proposed model achieved SOTA results in several video-language tasks.

AI Researcher

AI Lab - Pontifical Catholic University of Chile (PUC)

📅 July 2017 – May 2021   📍 Santiago, Chile

- **ACL Workshop:** Significantly reduced computation and improved explainability when applying pretrained Transformer Models models by using adaptive algorithms.
- Explored effects of using class superset priors in semi-supervised learning for image classification by propagating gradients through DAGs.
- **Publication (CVPR2020):** Proposed alternative algorithm for Adaptive Computation Time on recurrent models for Visual Reasoning. Ablation experiments showed that the resulting models outperform baselines in both performance and transparency.

PROJECTS

Open Source Contributions

- PyTorch implementation and CUDA kernel for Quasi Recurrent Neural Networks.
- PyTorch implementation of Memory, Attention and Composition (MAC) Network capable of 99% accuracy on CLEVR dataset.
- Only working full implementation of Adaptive Computation Time for Recurrent Neural Networks using PyTorch.
- Invented and coded a new visualization tool for multi-label geographic data (see Percentage Gridmap).

Software Engineering

- **Iris:** Led, coordinated and managed a team of 10 programmers (computer science students) during four months in building a scalable platform with both mobile and web (SPA) frontends.
- **TuPUC:** Developed application (web + native Windows and MacOS) to generate and rank schedule suggestions which achieved over a thousand users less than a week after deployment.

WORK EXPERIENCE

Google AI Research Internship

Computer Vision

📅 Oct. 2020 – Jan. 2021   📍 Mountain View, CA

- Improved accuracy and efficiency of models for video understanding through the introduction of additional modalities.

Zippedi Research Internship

Computer Vision and Navigation

📅 Jan. 2020 – Mar. 2020   📍 Santiago, Chile

- Implemented computer vision algorithms for the automatic recognition of products in store shelves.
- Models run locally on embedded devices, or on cloud GPU instances.

EDUCATION

Doctor of Philosophy (Ph.D.) in Computer Science

SVL Lab - Stanford University

📅 Sep. 2021 – Ongoing   📍 Stanford, CA

Co-supervised by Juan Carlos Niebles and Jiajun Wu.

Emphasis on efficient Vision and Video Understanding.

Master of Engineering in Computer Science

AI Lab - Pontifical Catholic University of Chile (PUC)

📅 July 2019 – May 2021   📍 Santiago, Chile

Supervised by Álvaro Soto, Ph.D. CMU.

Emphasis on Machine Reasoning, Meta Learning and Adaptive Computation. Graduated with highest distinction.

Bachelor of Engineering in Computer Science & Software Engineering

Pontifical Catholic University of Chile

📅 Jan. 2015 – Dec. 2019   📍 Santiago, Chile

Minor in Data Science. Graduated with distinction.

TEACHING EXPERIENCE

- Teacher: Professional Education Artificial Intelligence Program (2020-2021).
- Teaching Assistant: Deep Learning 2020.
- Teaching Assistant: Artificial Intelligence 2019-2020.
- Coach and Product Manager for Capstone Project 2019 (ABET certified, two semesters 13 and 10 students respectively).

SKILLS

Programming Languages

Proficient/expert in Python, C, C++, JavaScript.

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ML Tools, Packages and Resources

Proficient with PyTorch, NumPy, SKLearn. Comfortable with Tensorflow, Keras, Spacy, NLTK, Flume and Slurm.