



Anthony Ortiz

Ph.D. Candidate, Machine Learning and Computer Vision



Summary

My expertise lies in the intersection between machine learning and computer vision with papers published in top venues. I am particularly interested in the application of machine learning to scene understanding, generalization, transferability, domain adaptation, adversarial machine learning, social good problems. **I am looking for full time opportunities starting May 2020.**



Education

2015-08 - 2020-05

University of Texas at El Paso, Computer Science, Ph.D.

GPA: 4.0/4.0. PhD candidate in computer science with focus on machine learning for overhead imagery and its applications.

2015 - 2017

University of Texas at El Paso, Computer Science, Master's

2010 - 2014

PUCMM, Telematics Engineering, BS

Equivalent *Electrical and Computer Engineering* in USA. Graduated **Summa Cum Laude. Top 1 student** from my major.



Experience

2019-06 - 2019-08

Computer Vision/ Deep Learning Scientist intern

Orbital Insight, Palo Alto, CA

Improved conditional image generation of satellite images allowing creation of novel datasets previously unfeasible and improving segmentation models performance. A **patent** based on my work is being filled.

2019-03 - 2019-06

AI Research Intern

Microsoft Research, Redmond, WA

Research on transfer learning, model generalization, and human-machine collaboration for fast land cover mapping. Also worked closely with Microsoft AI for Earth using artificial intelligence to support NGOs. Papers under review at **AAAI 2020, NeurIPS 2019 W**, and **ICLR 2020**.

Advisors: Nebojsa Jojic, Dan Morris

2018-09 - 2019-03

Visiting Researcher

Quebec Artificial Intelligence Institute (Mila), Montreal, QC

- Started a collaboration with Intel AI to support the Red Cross in humanitarian efforts. Successfully detected bridges for the American Red Cross mission in Uganda.
- Worked on domain adaptation, generalization, and conditional computation.
- Papers accepted to **NeurIPS 2018** and **ICML 2019** Workshops, Paper submitted to **AAAI 2020**

Advisor: Yoshua Bengio

2017-08 - 2018-09

Ph.D. Research Associate

UTEP, Intelligent Agents and Strategic Reasoning Laboratory (IASRL)

Developed attacks and defenses against non-RGB image-based machine learning systems. Proposed a novel defense to increase robustness on non-RGB image-based classifiers while improving performance by more than 12%. Two papers accepted to **CVPRW 2018** and **MILCOM 2018** (oral).

Advisors: Olac Fuentes, Christopher Kiekintveld

2017-05 - 2017-08

Visiting Researcher

USC Institute for Creative Technologies & Army Research Laboratory (ARL)

Research in machine learning with state estimation and sensor modeling. Developed an algorithm to fuse SWIR hyperspectral images and digital elevation maps. This made possible the creation of SWIR 3D segmentation maps for situational awareness. Papers accepted to **SPIE DCS 2018** and **IEEE WHISPERS 2018**.

2016-06 - 2016-08

Visiting Researcher

USC Institute for Creative Technologies & Army Research Laboratory (ARL)

We solved the problem of automatically fusing hyperspectral data of a digitized scene with 3D point clouds, overlapping the same scene, in order to associate material spectra with corresponding height information for improved scene understanding. Paper accepted for **oral** presentation (**IGARSS 2017**)



Personal Info

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Computer Skills

Tensorflow, Pytorch, Keras

Python, Matlab, Java, C++

Scikit-learn, OpenCV



Languages

Spanish

English



Awards

Good Neighbor Scholarship 2016-2017, 2017-2018. Texas Department of Higher Education. Any student from continental America studying in Texas is eligible.

Anita Mochen Loya College of Engineering Graduate Fellowship, 2015 - 2016. 2 students from Computer Science received this honor.

"Diploma de Maxima Excelencia 2008-2009". Awarded by the Dominican President to **top 8 students in the country.**

First place winner in the regional competition of **math**, 2008. Top student in my state, **top 16 in the country.**



Additional Activities

LatinX in AI Member

IEEE Student Member

Mentored multiple undergraduate students

Reviewer for CVPR, NeurIPS, AAAI