Andres Mendez-Vazquez
Consultant Machine Learning and Artificial Intelligence

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"The World is Data... The question, How do we represent and understand it?" This is our basic tenant on how to look at data. Given that such representation impacts the efficiency on how such large data sets may be handled.

## Education

2008 University of Florida, Doctor of Philosophy in Computer Engineering, May 2008

2002 University of Florida, Master of Sciences in Computer Science, December 2002

1999 University of Yucatan, Bachelor of Mathematics, January 1999

## Present Employment History

2009–Present Associate Research Professor, Cinvestav Guadalajara

2019–Present Head of Data and Machine Learning, San Jose, CA, USA

2017–Present Consultant Natural Language Processing ByPrice Mexico

2018–Present Consultant Machine Learning and computer Vision STM Technologies

## Representative Projects

- atHUM 2019–Present

  Design of a Machine Learning style based system, similarity style engine and automation of processes as head of Data and Machine Learning.

- ByPrice 2017–2019

  Design and development of a retrieval information system based on short sentences.

- STM Technologies 2019–Present

  Development of an embedded vision system for security.

- Modutram Mexico SAPI de CV 2014-2016

  - Design and development of a computer vision architecture for recognition of obstacles in the Modutram railway system.
  - Design of algorithms for load balancing under best route. Additionally we helped to develop a module in the LINT Simulator for such algorithms. This simulator is under patent process.

- Oracle MDC 2015–2016

  Parallel Maximum Information Correlation (MIC) for Feature Selection in Machine Learning.

- Mexican Air Force 2014–2015

  Software development of a Bell 212 simulator.

- United States Army Research Laboratory, 2013–2018

  Development of information fusion algorithms based in optimization and MCMC methods.

## Research Experience

- At Cinvestav Guadalajara

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| August 2009 - Present | Research Associate Professor.<br>• Research in different topics at the Machine Learning group as Topic Rank, Kernel Learning, Neural Networks, Generative Models, Feature Selection, etc.<br>• Adviser of students at Master and Phd level in several areas of Machine Learning and Artificial Intelligence. |

- At University of Florida

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| January 2003 - May 2008 | Graduate Research Assistant, Information Fusion Algorithms, CISE, University of Florida under Professor Paul D. Gader.<br>• "Science of Land Target Spectral Signatures," U.S. Army Research Office Cooperative Agreement Number DAAD19-02-2-0012.<br>• "Feature-Based Methods for Landmine Detection with Ground Penetrating Radar," U. S. Army Research Office Cooperative Agreement Number DAAD19-02-2- 0012.<br>• "Optimized Multi-algorithm Systems for Detecting Explosive Objects Using Robust Clustering and Choquet Integration," National Science Foundation grant CBET-0730484. |

## Representative Research Publications

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| 2019 | Lea Vega Romero and Andres Mendez-Vazquez, "Detection of Topic-Specific Leaders in Social Networks", International Workshop on Web Search and Data Mining, April 29, 2019 |
| 2018 | Arturo Garcia-Garcia, Andres Mendez-Vazquez, Marek Z. Reformat, "Generation and Reduction of Fuzzy Sets with PG-Means and Fuzzy Similarity Measures." Fuzzy Logic Augmentation of Neural and Optimization Algorithms 2018: 287-307 |
| 2015 | J. Salazar, A. Mendez-Vazquez "SMV: Simplex of maximal volume based upon the Gram-Schmidt process," in Image and Signal Processing for Remote Sensing XXI, Lorenzo Bruzzone, Editors, Proceedings of SPIE Vol. 9643 (SPIE, Bellingham, WA 2015), 96430U. |

## Technical Skills

- Programming Languages: Python, Cython, C.
- Development Frameworks: Github, Docker
- Operating Systems: Linux.
- Document Markup Language: lyx, LaTeX.