



JUAN J. FLORES

Professor – Data Scientist

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PROGRAMMING LANGUAGES AND SOFTWARE

Python, Web Development (HTML, CSS, JQuery, Django), Mathematica, Javascript, Java, C, C++, SQL, Lisp, and knowledge of more than fifteen other programming languages.

Machine Learning Libraries in Python: Sklearn, Pandas, TensorFlow, Numpy, and StatModels, among others.

Development/Collaboration Frameworks and IDEs: Git, PyCharm, and Jupyter, among others.

EXPERIENCE

Current Positions

Full-Time Professor Researcher (1986 - present). Electrical Engineering, University of Michoacan. Morelia, Mexico. Ph.D. students became Mexican National Researchers. Researcher index h: 12, i-10: 19, as measured by Google.

Visiting Scholar (2020-2021). Computer and Information Sciences, Univ. of Oregon. Eugene, OR, USA. Position extended until March 2022.

Technology Transfer

MIRD Intelligent Monitoring of Distribution Networks. CFE, Mexico has avoided fines of up to 720,000 USD for 18 months by using a forecasting system. A fully functional commercial system (developed in **Python**, using Scikit-learn, Django, SQL, and Parquet) with a web interface connected to CFE's databases. I designed, led, managed, and developed the machine learning and front-end components.

Power Forecasting for the National Interconnected System – Mexican Energy Control National Center receives forecasting information for short-term planning and dispatch of generation units. I designed, led, and directed the development (**Python**) of the machine learning component.

AWARDS AND SCIENTIFIC SOCIETIES.

Mexican National Researcher Level II. CONACYT, 2021. Selected as 1 of 468 researchers in engineering from 33,165 researchers in Mexico.

Member of the Mexican Academy of Sciences. 2014. Selected as 1 of 38 members in Computer Science in Mexico.

Member of the IEEE.

Fullbright scholarship to pursue a doctoral degree for high-achieving students in Mexico. 1991.

The third best student (out of 50) by academic proficiency, class of 1983. School of Electrical Engineering. University of Michoacan, Mexico.

EDUCATION

Ph.D. in Computer Science. Dissertation in the area of Artificial Intelligence – Qualitative Reasoning. University of Oregon, USA.

M. Sc. in Computer Science. Thesis in the Area of Artificial Intelligence – Expert Systems. CINVESTAV, Mexico.

B. Eng. in Electrical Engineering. Thesis in the Area of Programming – Algorithms and Data Structures. University of Michoacan, Mexico.

SKILLS

Hard skills

Programming Languages: Python, HTML, CSS, Mathematica, Javascript, Java, C, C++, SQL, and Lisp, among others.
Development/Collaboration Frameworks and IDEs: Git, PyCharm, and Jupyter, among others.
Web Development: HTML, CSS, JavaScript, jQuery, Django.
Machine Learning: Classification, Clustering, Regression, Time Series Forecasting, Anomaly Detection, Data Preprocessing.
Machine Learning Libraries in Python: Sklearn, Pandas, TensorFlow, Numpy, and StatModels, among others.
Deep Learning: MLP, CNN, LSTM, Encoder-Decoders, GANs.
Algorithms: Design, Analysis, Complexity.
Mathematics: Solid background in Discrete and Continuous Mathematics, Probability, and Combinatorics.
Statistics: Analysis, Hypothesis Testing, Visualization, Bayesian Models, HMM, Regularization.
Machine Learning Libraries: SciKit-Learn, TensorFlow, Pandas, StatModels, Numpy, Bokeh, Matplotlib, Jupyter, Mathematica.
Software Engineering: Project Management, Requirements Engineering, Systems Architecture Design, Agile Development, Scrum.
Databases: SQL, Parquet.

Soft skills

Communication: verbal and written.
Teamwork: leadership, coordination, cooperation, direction of programming/development teams, and research teams direction.
Adaptability: organization, autodidact, self-motivation, open-mindedness, persistence.
Reasoning: analysis, brainstorming, decision-making, problem-solving.
Creativity: innovation, mind mapping, experimentation, questioning, design.
Ethics: integrity, responsibility, commitment, professionalism.
Interpersonal: teaching, public speaking, mentoring.
Management: I have been the assistant head of the School of Electrical Engineering and the Coordinator of the Masters and Ph. D. programs at the Graduate Division.

COURSES TAUGHT RECENTLY

I have 35+ years of experience teaching at universities (undergraduate and graduate courses) and continuous education programs offered to different companies. The following lists enumerate the most recent courses I have taught.

University of Oregon (English): Software Engineering, Fluency with Information Technologies, Programming and Problem Solving (Python), Discrete Event Simulation, Graduate Seminar: Evolutionary Computation, Graduate Seminar: Qualitative Analysis of Dynamic Systems, Operating Systems, Computer Organization. A product of the last course I taught on Software Methodologies is a conference article presented at the International Conference on Time Series and Forecasting. The article is entitled "Pipeline Trees - An Auxiliary Tool in the Creation of Time Series Pipelines."

University of Michoacan (Spanish): Deep Learning, Machine Learning, Data Mining, Time Series Analysis, Modelling, and Forecasting, Evolutionary Computation, Research Methodologies, Introduction to Algorithms, Artificial Intelligence, Operating Systems.

LANGUAGES AND HOBBIES

Languages

Spanish: Mother tongue; **English:** Speak, listen, read, write (90%); **French:** Speak, listen, read, write (50%);
Italian: Speak, listen, read, write (30%); **Portuguese:** Speak, listen, read, write (30%).

Hobbies

Running; Photography; Juggling; Reading (primarily technical).

PUBLICATIONS AND RESEARCH WORK

You can find my full Academic CV at <http://dep.fie.umich.mx/~juan/CVFlores.pdf>