David Laredo
Senior Research Assistant

Computer scientist skilled in the fields of mechanical engineering, machine learning and statistics. I have led or supervised the development of more than three novel methods for the application of machine learning to engineering problems.

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EXPERIENCE

Senior Research Assistant, Summer 2017 - Summer 2019
University of California, Merced

- Led a team that developed an **algorithm for the automatic selection of neural network models**. Algorithm works for classification and regression problems. The obtained models yield an accuracy of up to 95%. Implemented in Python
- Led a team that developed a **machine learning method for estimating the remaining useful life (RUL) of jet engines**. The method predicts the RUL of 75% of the tested engines with a confidence of ± 5 cycles. Implemented in Python
- Developed a **machine learning method to detect faults in an HVAC system**. The system performs online classification of faults in the system with an accuracy of 80%. Implemented in Python

Firmware Engineer, Fall 2015 - Fall 2016
Intel, Guadalajara

- Responsible of **BIOS development** for the PCH module: debugging and implementation of new features.
- **Implemented new BIOS features** for Intel's micro-server SoC such as IO Memory, Ethernet, IO devices.
- Implemented support for wake-on-LAN and for the use of high IO memory on Intel's Denverton platform.
- Main used languages were C/C++ and Python.

Business Application Developer, Fall 2012 - Fall 2013
Anzen Consultancy, Mexico City

- Front end application developer for Citibank in Mexico.
- **Implemented new features** for Citi's web banking system such as balance inquiries and account statements.

EDUCATION

M.S. in Mechanical Engineering - GPA:3.6
University of California - Merced, Fall 2016 - Fall 2019
Thesis: "Application of Deep Learning Methods in the Treatment of Mechanical Engineering Problems."
Relevant Coursework: Machine Learning, Controls, Dynamics, Numerical Analysis.

M.S. in Computer Science - GPA:3.5
CINVESTAV-IPN, Fall 2013 - Fall 2015
Thesis: "A Continuation Method for Solving Mixed-Integer Multi-objective Optimization Problems."
Relevant Coursework: Numerical Optimization, Statistics, Algorithm Design, Evolutionary Algorithms.

B.E. in Computer Engineering - GPA:3.0
ESCOM-IPN, Fall 2018 - Fall 2012
Relevant Coursework: Object Oriented Programming, Database Design, Algorithm Design, Software Engineering.

COMPUTER SKILLS

Skill	Rating	Skill	Rating
Python/C/C++	●●●●	Java/Matlab/Excel	●●●○
Tensorflow/Simulink/R	●●○○	Unix/Fortran/SQL	●●●○

LANGUAGES & SOFT SKILLS

Skill	Rating	Skill	Rating
Spanish	●●●●	Leadership	●●○○
English	●●●●	Teamwork	●●●○

RESEARCH PUBLICATIONS

- Automatic Model Selection of Neural Networks. Preprint at Arxiv, 2019.
- A Neural Network-Evolutionary Computational Framework for Remaining Useful Life Estimation of Mechanical Systems. Published at Neural Networks, Vol. 116, 2019.
- Enhanced Directed Search: A Continuation Method for Mixed-Integer Multi-Objective Optimization Problems. Published at Annals of Operations Research, 2018.