# STEPHANE DAMOLINI

DATA SCIENTIST
+ STRUCTURAL ENGINEER
11 YEARS OF EXPERIENCE

Somerville, MA
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**US Green Card + French Citizen**
**Driver's License**

## ABOUT ME

MIT Engineer, problem solver, code writer, beta tester. Enthusiastic about machine learning, engineering, new technologies, and optimization. Currently extending my data science & data science knowledge through online courses and freelance projects using Python.

www.damolini.com

## SKILLS

**WORK**

- Data Processing / Visualization
- Machine Learning
- Numerical and Finite Element Modeling
- Statistics

**SOFTWARE**

- Python (Pandas, Numpy, Keras, Tensorflow, scikit-learn, scipy, matplotlib, seaborn, shap, Flask)
- Excel VBA + VB.NET
- ANSYS + ACS-SASSI,
- Maple + MATLAB + OCaml
- Atlassian Suite + GIT
- AWS

**SOFT SKILLS**

- Problem Solving
- Attention to Detail
- Efficiency & Automation
- Inquisitive

**Bilingual French / English**
**Conversational in Spanish**

## PROFESSIONAL EXPERIENCE

**JENSEN HUGHES** (2016 – present)
PRINCIPAL ENGINEER IV AND PROJECT MANAGER Wakefield, MA

**Project Management and Business Development**

- Created the Data Automation & Machine Learning (DAML) initiative to promote efficiency throughout the company by automating tedious and repetitive tasks, and by leveraging machine learning to increase our edge over competitors.
- Led numerous Probabilistic Risk Assessment projects to compute Core Damage Frequencies of nuclear reactors in USA, Korea. Engineered in-house codes and programs advancing the state-of-the-art.
- Subject Matter Expert + Program Sponsor of Finite Element Program ANSYS.

**Data Processing and Optimization**

- Authored a VB.NET time and frequency domain signal processing and converting software in a team of four using Atlassian suite. This program is used by many US and foreign utilities. Expected revenue greater than $100k/year.
- Developed a Python package to enhance the capabilities of highly specialized finite element program ACS-SASSI by adding custom functions to:
  - Automate model meshing
  - Verify integrity of stiffness matrix
  - Plot customizable, engineer friendly views of the model

  This has allowed to streamline development and verification of models resulting in 30%+ revenue increase.
- Created an EXCEL VBA signal processing program now used company-wide:
  - Imports and converts up to a million accelerograms into response spectra.
  - Automatically processes the spectra to provide seismic data as needed.
  - Performs deterministic or median-centered clipping (peak reduction).
  - Computes average, median and 86$^{th}$ percentile curves for use in probabilistic or deterministic analyses.
- Wrote MS-DOS batch files to run finite element analyses automatically, optimizing utilization and user efficiency. Set up remote access to company's supercomputer.
- Beta-tested and improved the in-house probabilistic event tree software

**STEVENSON & ASSOCIATES** (2009 – 2016)
LEAD ENGINEER Woburn, MA

**Mathematical & Numerical Modeling**

- Developed 10+ state-of-the-art 3D Finite Element models of buildings and components, including a unprecedented adjustable resolution 3D model of a nuclear power plant allowing adaptative performance based on needs & computer resources
- Performed multiple 3D Soil-Structure Interaction Analyses (SSI)
- Completed a transient thermo-structural analysis of the Phoenix Airport using a unique pipeline involving FDS, Matlab, Smokeview, and Abaqus.
- Supported three peer reviews in front of industry experts.

## EDUCATION

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)**
**GPA: 5.0/5.0** 2008-2009
Master of Civil and Environmental Engineering Cambridge, MA, USA

**ÉCOLE SPECIALE DES TRAVAUX PUBLICS (ESTP)**
**Ranked 4/500** 2006-2008
Master of Science in Civil Engineering and Construction Paris, FR

**JANSON DE SAILLY** 2004-2006
BSc in advanced mathematics, statistics, physics, and computer science Paris, FR

## PUBLICATIONS

[1] Carbon Nanotubes and Their Application to Very Long Span Bridges, MIT, 2009:
Innovative multiscale stochastic MATLAB simulation of a carbon nanotube cable.

For all publications and full-length *curriculum vitæ*, visit cv.damolini.com.