STEPHANE DAMOLINI

DATA SCIENTIST
STRUCTURAL ENGINEER
11 YEARS OF EXPERIENCE

stephane@damolini.com

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 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, South Korea, and France. Engineered in-house codes and programs advancing the state-of-the-art.
- Subject Matter Expert + Program Sponsor of Finite Element Program ANSYS.
- Expert level consulting to EDF (Électricité de France) for Flamanville, France.

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 $200k/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 a 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 86th 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 unprecedented adjustable resolution 3D model of a nuclear plant enabling 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 upgrade using a unique pipeline involving FDS, Matlab, Smokeview, and Abaqus.
- Supported three peer reviews in front of Nuclear Regulatory Commission 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 4th/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.