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Education

- **California Institute of Technology:**
  Doctor of Philosophy in Civil Engineering, Minor in Geophysics, 2006
  Dissertation Title: Time-Frequency Analysis of Systems with Changing Dynamic Properties
  - Developed time-frequency representation techniques for non-stationary signals, particularly those of interest to nonlinear structural analysis and structural health monitoring. Adapted Wigner-Ville Distribution for use in seismic and structural analysis.
- **California Institute of Technology:** M.S. in Civil Engineering, 2000
- **University of California at Berkeley:** B.S. in Civil and Environmental Engineering, 1999

Employment History

- **Technologist** 2006 - Present
  Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA
  Advanced Deployable Structures
  - Principal investigator on a two-year research and technology development initiative to develop and test a meter-scale piezoelectrically-active composite reflector. Directed the development of a suite of wavefront control algorithms and associated hardware to correct thermally-induced deformations to a shape tolerance of 100 nm.
  - Supported mission operations for a Mars lander.
  - Developed least-squares videogrammetry tracking algorithm for deployment of an 8 m coiled-mast antenna.
  - Led test campaign to characterize the dynamic and acoustic response of a 1.2 m optical segment. Developed impedance-based actuator state-of-health hardware and software system.
- **Visitor in Aeronautics/Aerospace** 2009 - Present
  California Institute of Technology, Pasadena, CA
  Graduate Aerospace Laboratories (GALCIT)
  - Testing of deployable structures, research and teaching assistant.
- **Graduate Student: Research Assistant, Teaching Assistant** 1999 - 2006
  California Institute of Technology, Pasadena, CA
  Department of Civil Engineering
  - Broad background in signal processing, transform methods, time-frequency analysis, real-time signal analysis, finite element modeling, MATLAB, Perl, Python, shell scripting, LaTeX, and Fortran coding.
  - Systems Administrator for Civil Engineering and Applied Mechanics computer laboratory.
- **Assistant Research Engineer** Summer 1999
  University of California at San Diego, San Diego, CA
  Department of Structural Engineering
  - Co-authored paper on dynamite-induced liquefaction and remediation.
- **Research Assistant** 1998 - 1999
  SAC Steel Project, Berkeley, CA
  - FEMA investigation of the brittle behavior of welded steel frame structures that surfaced in the January 17, 1994 Northridge Earthquake.