Jeremy E. Kozdon, PhD

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EDUCATION

Stanford University — Stanford, CA
Ph.D. in Computational and Mathematical Engineering — *2009*
M.S. in Computational and Mathematical Engineering — *2006*

University of California Santa Cruz — Santa Cruz, CA
B.A. in Physics with minor in Computer Science — *2004*

EXPERIENCE

NextSilicon — (fully remote) Monterey, CA
Staff HPC Applications Engineer — *2023 – Present*
HPC Applications Engineer — *2022 – 2023*

- Spearheaded the development, tuning, and profiling of HPC libraries, benchmarks, and applications on NextSilicon's novel HPC accelerator (Maverick)
- Led the development of the NextSilicon implementation of the HPCG benchmark
- Pioneered the exploration and development of sparse matrix routines for NextSilicon
- Collaborated with the customer success team to create training materials, software documentation, and optimization guides, as well participated in both on-site and remote customer training
- Mentored junior engineers to foster skill development and build an effective remote team

Naval Postgraduate School — Monterey, CA
Associate Professor of Applied Mathematics — *2019 – 2022*
Assistant Professor of Applied Mathematics — *2012 – 2019*

- Developed and taught a diverse range of courses including introductory calculus, numerical analysis, and high performance computing (CPU, GPU, and MPI techniques)
- Conducted pioneering research on robust, accurate, and adaptive methods for earthquake dynamics, climate modeling, and weather prediction
- Implemented research findings on both multi-CPU and multi-GPU machines, demonstrating versatility and adaptability across different hardware architectures
- Secured research funding from prestigious sources including the National Science Foundation, Department of Navy, and cooperative research agreements with other universities

Department of Geophysics — Stanford, CA
NSF Fellow for Transformative Computational Science using CyberInfrastructure — *2011 – 2012*
Postdoctoral Research Scholar — *2009 – 2011*

- Co-led the development of an MPI and Fortran-based software package for multiphysics dynamic rupture simulations, utilizing provably stable, high-order finite difference routines
- Coordinated the implementation of numerical methods for simulating the 2011 Tohoku earthquake and tsunami in Japan, supporting a scientific drilling project
- Pioneered the development of a dynamically adaptive mesh method for earthquake ruptures
- Mentored multiple undergraduate students and provided support in advising graduate students

SKILLS

- Skills: numerical methods development, finite {element, difference, volume} methods, scientific software design, parallel computing, numerical linear algebra
- Programming and technologies: C, C++, Fortran, Julia, MATLAB, CUDA, MPI, OpenMP, Git, LaTeX, continuous integration testing