Zeyad Zaky

6360 Camden Avenue, San Jose, CA 95120
| (408) 694-8375 | zeyadzaky@berkeley.edu | https://www.linkedin.com/in/zeyad-zaky/ | **US CITIZEN** |

Computational scientist with a strong background in numerical mathematics who is passionate about applying optimization techniques and algorithms to large data sets in order to extract guiding insights and motivate decisions.

SKILLS

- Math Modeling, Physical Simulation Modeling, Numerical Mathematics (Lin. Alg./Diff. Eqns.), FEM, CFD, Heat Conduction/Convection, Scientific Computing, Optimization, Machine Learning, Neural Networks
- Python (NumPy, SciPy, Matplotlib), Fortran, Matlab, Shell, C/C++, Jupyter Notebook, LaTeX

PROFESSIONAL EXPERIENCE

UC Berkeley **Berkeley, CA**
Graduate Student Researcher, Computational Materials and Manufacturing Research Lab August 2013 – Present

- Software development of mathematical models in Fortran, Python, C/C++
- Math modeling of infiltration of particle-fluid slurries into permeable porous media via Lattice Boltzmann method and Discrete Element Method
- Optimization for parameter selection of effective properties of doped materials using Genetic Algorithms
- Non-invasive pipe repair via particle injection and magnetic field application

Lawrence Livermore National Lab **Livermore, CA**
Graduate Scholar *June 2017 – August 2017*

- Automation and software development in Python (NumPy) for data extraction, filtering, and analysis of noisy experimental pressure sensing signals and computational FEM pressure data
- Developed UQ/SA methodology for model calibration to use LHS, Sobol' indices, and inform calibration
- Seminars: Predictive Modeling, Machine Learning, Deep Learning

TU-Kaiserslautern **Kaiserslautern, RP**
Visiting Scholar *May 2015 – August 2015*

- Delivered two research seminars and continued PhD research while visiting the Lehrstuhl fur Technische Mechanik under supervision of Prof. Dr. Ing. Ralf Muller.

Lawrence Berkeley National Lab **Berkeley, CA**
Graduate Scholar *May 2014 – August 2014*

- Modeling and numerical simulation of Resonant Frequency (RF) Cavity dynamics with mechanical coupling via development of C and Python scripts
- Reported findings in presentation and document form

Baker Hughes Inc. **Claremore, OK**
R&D Engineering Intern *June 2012 – August 2012*

- Multi-phase testing of gas pumps and separators at state of the art facility
- Created tools to estimate head loss in shroud piping and analyze experimental data in Excel

ConocoPhillips **Carson, CA**
Graduate Scholar *June 2011 – September 2011*

- Optimized tank levels for net positive suction head requirements
- Created QA/QC guidelines for HEX re-installation
- Calculated MTBF statistics and justified action on bad actor pumps

EDUCATION

UC Berkeley, PhD, GPA 3.98 **Berkeley, CA**
Mechanical Engineering with Designated Emphasis in Computational Data Science and Engineering, 2017

- Courses: Num. Lin. Alg./Diff. Eqns., Heat Conduction/Convection, Micro-scale HT, Fluid Mech. Series, FEM, Modeling of Manuf. Proc., Continuum Mechanics, Stat. Thermo., Machine Learning (Coursera)

UCLA, M.S., GPA 3.84 **Los Angeles, CA**
Mechanical Engineering with Focus in Heat Transfer and MEMS, 2013

UCLA, B.S., Major GPA 3.75, Cum. GPA 3.66 **Los Angeles, CA**
Mechanical Engineering, 2012

AWARDS

- Outstanding Graduate Student Instructor Award (Spring 2017), Course: Modeling of Manuf. Proc.
- Graduate Division Block Grant Award (Summer 2014/16)
- Arab American Association for Engineers and Architects Scholarship (Spring 2015)
- Best Poster Award contributor (Spring 2014)
- Dean's List (Spring 2009/11, Fall 2011)
- Coach's Award Leland High School Football

PUBLICATIONS

- Serrano, C., Doolittle, L., Driver, D., Queiruga, A., Patel, B., Zaky, Z. (2016). *End-to-end FEL beam stability simulation engine*. Proc. of International Particle Accelerator Conference.
- Mukherjee, D., Zaky, Z., Zohdi, T. I., Salama, A., and Sun, S. (2014). *Investigation of guided particle transport for noninvasive healing of damaged piping system using electromagneto- mechanical methods*. Journal of Society of Petroleum Engineers.

EXTRACURICULAR ACTIVITY

- GPS Mentor for prospective graduate students of underprivileged backgrounds (2016)
- Graduate Student Representative of Engineering College of Engineering Library Committee (2015/2016)
- Activities Director, Muslim Student Association (2011)
- Head Director, Incarcerated Youth Tutorial Project (2010)
- Academic Mentorship Program Tutor and Mentor (2009-2012)