

CONTACT INFORMATION	Berkeley, CA / Mountain View, CA kuhlen@gmail.com (831) 588-1468	www.mqk.name linkedin.com/in/mikekuhlen
EXPERIENCE	Fellow, Insight Data Science , Mountain View, CA Aug. - Oct. 2013 <ul style="list-style-type: none">▷ Created <i>Delay Me Not!</i> (www.delaymenot.info), a flight delay predictor providing ticket purchasing advice.▷ Analyzed 150 million domestic flights from 1987 to 2013, stored in a MySQL database.▷ Applied machine learning regression and classification algorithms (linear and logistic regression, k-nearest-neighbors, random forests) using Python's numpy, scipy, pandas, and scikit-learn packages to model flight delay predictions.▷ Designed an interactive web front end, utilizing Flask, Twitter Bootstrap, and JavaScript, hosted on my own nginx webserver. Postdoctoral Researcher <i>Theoretical Astrophysics Center, UC Berkeley</i> , Berkeley, CA 2009 - 2013 <i>Institute for Advanced Study</i> , Princeton, NJ 2006 - 2009 <ul style="list-style-type: none">▷ Performed large-scale numerical N-body simulations (on 1000's of cores on NASA's <i>Pleiades</i> and NCCS's <i>Jaguar</i> supercomputers) of the formation of a Milky-Way-analog galaxy (featured in the Department Of Energy's OASCR <i>Breakthroughs 2008</i> report on Recent Significant Advancements in Computational Science).▷ Analyzed and visualized 20TB of numerical simulation data consisting of billions of particles per time step.▷ Studied the formation of dwarf galaxies utilizing state-of-the-art cosmological adaptive mesh refinement (AMR) hydrodynamics simulations.▷ Developed C and Python tools (often MPI-parallelized) for numerical data analysis and visualization.▷ Contributed to the development of the <i>Enzo</i> cosmological hydrodynamics community code (enzo-project.org) written in C++ and Fortran, and the <i>yt Project</i> (yt-project.org), an astrophysics data analysis and visualization package for Python.▷ Published 41 papers (18 first author) in peer reviewed journals (including Nature and Science), which together have received more than 2,500 citations. Ph.D. Student, UC Santa Cruz , Santa Cruz, CA 2000 - 2006 <ul style="list-style-type: none">▷ Applied different numerical techniques and simulation codes to study a wide range of astrophysical research topics, ranging from stellar convection to cosmological structure formation.▷ Analyzed, visualized, and synthesized simulation data with self-developed, open-source (VisIt), and commercial (IDL, Mathematica) tools.▷ Co-taught the Akamai Maui Short Course, applying inquiry-based science education techniques to prepare Hawaiian undergraduates for summer internships at local technology companies.	
SKILLS	Languages: Python, C, MySQL, bash, HTML/CSS, L ^A T _E X, C++ (some exp.), JavaScript (some exp.) Tools: git, hg, sed, awk, numpy, scipy, pandas, scikit-learn, matplotlib, mpi4py, IPython notebook, HDF5, Flask, Twitter Bootstrap Other: Linux (10+ years), numerical simulation (N-body and AMR CFD), numerical analysis, parallel computation (MPI), visualization, machine learning and classification (some exp.)	
EDUCATION	University of California at Santa Cruz , Santa Cruz, California <i>Ph.D., Astronomy & Astrophysics, "Adventures in Numerical Astrophysics"</i> June 2006 California Institute of Technology , Pasadena, California <i>B.S., Physics</i> June 2000	
PUBLIC TALKS	<ul style="list-style-type: none">▷ Mt. Tamalpais State Park Astronomy Program (co-sponsored by Bay Area Wonderfest) "Dark Matter, Dark Skies, Bright Minds", June 2012▷ SF Amateur Astronomers, "The Milky Way as a Dark Matter Laboratory", May 2012▷ "What Physicists Do" lecture at Sonoma State University, October 4, 2010	