Michael K. McCourt

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Skills and Technical Proficiencies

Modeling

- I specialize in building simple but predictive models for complex systems, identifying and highlighting the most salient features. *My goal is to make difficult problems easy.*
- Expertise in translating ideas rapidly into equations (or code) and vice-versa.

Programming

- Proficient in C, Ruby, and Python. Also proficient with Mathematica, Emacs Lisp, and shell scripts.
- Proficient in high-performance computing (utilizing some of the nation's fastest supercomputers), and in statistical data fitting using machine learning algorithms, genetic algorithms, and Markov Chain Monte Carlo simulations.
- Created popular open-source tools for simplifying daily scientific tasks, including:
    - "gnuplot-mode," a package for editing plots, downloaded by over 30,000 scientists to date, and
    - "bibslurp," a tool for automatically making bibliographies from the standard NASA database, adopted by 2,000+ scientists

Communication and Collaboration

- Invited speaker to 29 scientific conferences and seminars
- Colleagues often send me their proposals for comments, and one of my proposals for supercomputer time was selected by the granting agency as their published example of a well-written application
- Selected as a referee (expert reviewer) for five academic journals, including *Nature Letters*
- Initiated several new collaborations among scientists

Management Experience

- Raised over $2 million in funding and supercomputer time to run a small research group
- Conducted an international job search and hired a postdoctoral research scholar
- Mentored two undergraduate students and three graduate students on multi-year projects
- Organized and taught a fluid dynamics "bootcamp" at UCSB after recognizing it was needed

Experience and Education

- Authored 25 peer-reviewed scientific papers cited 2,200 times (research index quotient in the 95$^{\text{th}}$ percentile for astrophysics at the time of my departure in 12/2017)
- Conducted self-directed research on 10 different topics over 11 years
- Researching deep learning image recognition algorithms as a freelance consultant for a cybersecurity firm

KITP Fellow, UC Santa Barbara	*(awarded for 2019-2020)*
Hubble Fellow, NASA	Sept 2016—present
ITC Fellow, Harvard University	Sept 2014—July 2015

- Recipient of prestigious independent research fellowships.

Graduate Student Researcher, UC Berkeley.	Aug 2008—Aug 2014

- Recipient of both department awards for outstanding graduate student research.

PhD, Astrophysics, UC Berkeley	May 2014
MA, Astrophysics, UC Berkeley	May 2010
BS, Physics, Stanford University (concentration in theoretical physics)	June 2008