# Jamie Tolan

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## Experience

**Insight Data Science Fellowship** *Palo Alto, CA*
*Data Science Fellow* *June 2016 - Present*

- Designed parking recommendation system for Spot Angels using Python and scikit-learn (http://parkingpredictor.space)
- Leveraged public data sets of city zoning and parking supply to build model
- Produced web interface to display results using Flask and SQL
- Identified features useful for improving parking availability model

**Postdoctoral Scholar** *Stanford, CA*
*SLAC National Laboratory / Stanford University* *October 2014 - May 2015*

- Integrated multi-frequency data into pipeline to constrain models of astrophysical foreground emission
- Led analysis and forecast modeling for 150 GHz telescope
- Deployed state of the art telescope to the South Pole under hard deadline
- Validated instrument optical performance using calibration data taken in the field

**Research Assistant** *Stanford, CA*
*Stanford University* *June 2008 - September 2014*

- Analyzed 20TB dataset using distributed computing cluster to resulting in statistically significant results
- Expanded Monte Carlo jackknife analysis to discover systematics in data
- Developed novel algorithms to analyze maps of polarization fields using principle component analysis
- Implemented algorithm in data reduction pipeline that doubled significance of result ($3\sigma$ to $5\sigma$)
- Developed algorithms to identify instrument malfunction in time series data
- Designed and built an array 150 GHz polarization sensitive receivers
- Led instrument fabrication and calibration of optical system
- Successfully deployed instruments to the South Pole in 2010, 2011 & 2012

**Teaching Assistant** *Stanford, CA*
*Stanford University* *September 2007 - March 2013*

- Led discussion and lab groups for Stanford Physics courses
- Designed curriculum for mechanics and heat lab and electromagnetism discussion sections
- Mentored small groups in low temperature physics lab
- Received scores of >4/5 in student surveys for clarity, explanation, preparation and overall effectiveness

## Education

**Stanford University** *Stanford, CA*
*Ph.D. Physics* *September 2014*
Dissertation Title: "Testing Inflationary Cosmology with BICEP2 and The Keck Array."

**University of California, Berkeley** *Berkeley, CA*
*Double Major: B.A. in Physics and Astrophysics* *May 2006*

## Skills

**Languages:** Python, SQL, MATLAB, HTML/CSS, IDL

**Tools:** Pandas, Scikit-learn, LaTeX, bash, SLURM, cvs, git

**Operating Systems:** osX, Linux, UNIX

**Design & Fabrication:** Solidworks, Altium, Zeemax, microwave antenna/detector design and characterization, metal machining, cryogenics