

# Albert Lee

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## Skills

**Programming:** IDL, Python (numpy, scipy, pandas, scikit-learn, Flask), SQL

**Operating Systems and Tools:** Windows 7, Linux, Photoshop, git

**Other:** Statistical Analysis, Bayesian Analysis, Machine Learning, Image Processing

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## Experience

### Insight Data Science

Boston, MA

*Data Science Fellow*

2017

- Built a Flask web app with a Python backend for predicting market reach of posts. Projected to increase the number of likes by 20%. ([www.pikkit.site](http://www.pikkit.site))
- Engineered features for extracting actionable information from over 20,000 Instagram images.
- Adapted scikit-learn regression packages for an automatic feature selecting algorithm and used pandas to streamline data processing.

### Harvard University

Cambridge, MA

*Research Fellow*, Finkbeiner group

2013 – 2017

- Developed a customized Bayesian posterior sampler in IDL for extracting a faint second-order signal from a noisy data set of ~10 million stellar spectra.
- Optimized algorithm for numerical accuracy. Improved run time by a factor of 4.
- Created a new map of galactic dust reddening, a data product of interest to most of the observational astronomy community.

*Teaching Fellow*, Introduction to Mechanics

2015

- Led multiple sections, showing alternate ways to understand core concepts from lectures.
- Converged on quiz-and-review-based teaching method using students' feedback.

### MIT

Cambridge, MA

*Undergraduate Researcher*, Sciolla group

2008 – 2010

- Proved that CCD images acquired by the Dark Matter Time Projection Chamber (DMTPC) have non-uniform gain.
  - Designed and conducted experiment to identify and calibrate non-uniform gain. Developed calibration procedure that improved signal to noise by factor of 2.5.
  - Produced a new software package in C++ to address the need for a quicker alternative that could still reliably simulate the physics of the DMTPC.
  - Simulated detector efficiency. Helped collaboration predict limits on detector sensitivity.
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## Education

### Harvard University

Cambridge, MA

*PhD in Physics*

2011 – 2017

NSF GRFP Fellow (2011 – 2014)

### MIT

Cambridge, MA

*BS in Physics*

2006 – 2010

Malcolm Cotton Brown Award for a senior pursuing graduate studies in experimental physics