

Clara Bennett

Software and Data Engineer

Versatile engineer with strong troubleshooting skills, a knack for gaining deep understanding of problem domains, and leadership experience. I value collaboration, impactful work, and opportunities to learn.

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WORK EXPERIENCE

Picwell

Lead Software Engineer, Commercial Team

December 2014 – April 2016

- Led development of a new recommendation product for commercial health insurance, using **Python**, **Flask**, **Pandas**, **Scikit-Learn**, and **Apache Spark**
- Designed significant improvement to Picwell Score scaling algorithm
- Restructured app to disentangle data retrieval from business logic for clarity and testability
- Designed and prototyped a “modeling harness” wrapping **Scikit-Learn** that allows the analytics team to build deployable models
- Rebuilt client data templates to improve data quality and reduce redundancy
- Created domain-relevant interview problems to improve candidate experience
- Built engineering team site and blog

SKILLS

- Python
- Flask
- Pandas
- Apache Spark
- Git
- MySQL
- Redis
- Chef
- Ruby
- Django
- Scikit-Learn
- Scipy
- Haskell
- Matlab
- IDL
- LabVIEW
- SolidWorks
- LaTeX

WORK EXPERIENCE

The Motley Fool

Software Developer, Wealth Management Team

April 2014 - December 2014

- Contributed to stock-recommender and managed-account apps, using **Python** and **Django**
- Built web tool for flagging bad stock price data, using **Flask**, **Pandas**, and **Redis**
- Wrote new optimizer with **Scipy** to create personalized allocation of managed funds
- Reworked unreliable legacy data acquisition code to reduce errors and provide alerting
- Discovered and fixed several layered, unnoticed bugs that prevented managed accounts from properly detaching on request
- Augmented stock-pick recommender to allow users to blacklist stocks
- Led initiative to standardize code style on team and evangelized code review through **GitHub** pull requests

TALKS

- **Git: A Peek Under the Hood**, accepted to PyCon 2016
- **Unblocking Your Hackathon**, given at Femmehacks 2016
- **Code Comments**, Lightning Talk, PyCon 2015
- **Introduction to Pandas**, Workshop for PyLadies DC
- **Advanced Git: Motley Fool tech talk**
- **Building a Weather App with Flask**, guest lecture for **Code for Progress**

WORK EXPERIENCE

NASA Goddard Spaceflight Center Detector Systems Engineer

September 2011 - March 2014

Chervenak X-ray Detector Group

- Designed and implemented wiring, sample mounts, magnetic shielding, and electronics setup for adiabatic demagnetization refrigerator (ADR)
- Developed and maintained **LabVIEW** software for ADR data collection

Hubble Space Telescope ACS

- Development of a charge-injection protocol to mitigate effects of cosmic-ray damage on CCD imagers
- Modified the imager control software to test new injection methods
- Wrote **IDL** software for data analysis

EDUCATION

- Data Science, General Assembly (2014)
 - Studied and used several classification, regression, and clustering techniques, including naive Bayes, random forests, SVM, K-means clustering
- Massachusetts Institute of Technology (2006-2011)
 - Majored in physics
 - Coursework in scientific computing
 - Coursework toward a second major in Mathematics, incl. applied math and advanced algebra

WORK EXPERIENCE

LIGO Research Intern

40m Prototype Lab
June 2009 - August 2009

- Developed **Matlab** software for optimizing environmental noise-subtraction
- Gathered and analyzed data for various arrangements of vibrational sensors

WORK EXPERIENCE

PLANET Collaboration Research Intern

April - June 2009, June 2011

- Developed **FORTRAN** software to investigate the feasibility of using Monte Carlo methods to improve the modeling of microlensing light curves
- Recorded telescope observations in search of extrasolar planets, resulting in multiple publications in *The Astrophysical Journal*

WORK EXPERIENCE

MIT Undergraduate Researcher

Burgasser Brown Dwarf Group
February 2007 - July 2008

- Wrote **IDL** scripts to decompose spectral images of suspected brown dwarf pairs into constituent images
- Took photometric measurements of brown dwarf observations

OPEN SOURCE CONTRIBUTIONS

- **Falcon Framework**
 - Added Jython compatibility
 - Writing werkzeug-based development server
- Bugfix to **xlsx2csv**
- Added missing column alert to **vladiate**
- Contributed to design and features for **schematics-extensions**

CONFERENCES ATTENDED

- DataEngConf NYC 2015
- PyCon 2015
- MLConf NYC 2015
- Spark Summit East 2015
- Spark Summit 2014
- Ruby Retrocession DC 2014

EXTRACURRICULAR ACTIVITIES

Swimming

- Youngest person to **swim across the English Channel** in the 2008 season
- MIT Varsity Swim Team, 2006 - 2008

Tech Community

- Mentor at Femmehacks 2016
- Organized Python Study Groups for Women Who Code DC (2015)
- Arranged Motley Fool sponsorship of DC RailsGirls Workshop (2014)

PUBLICATIONS

- D.P. Bennett, ..., C.S. Bennett, et al. "A sub-Earth-mass moon orbiting a gas giant primary or a high velocity planetary system in the galactic bulge." 7 April 2014, *The Astrophysical Journal*, 785:2.
- K. Furusawa, ..., C.S. Bennett, et al. "MOA-2010-BLG-328Lb: A sub-Neptune orbiting very late M dwarf?" 26 Nov. 2013, *The Astrophysical Journal*, 779:91.
- J.C. Yee, ..., C.S. Bennett, et al. "MOA-2010-BLG-311: A planetary candidate below the threshold of reliable detection." 20 May 2013, *The Astrophysical Journal*, 769:77
- A. Gould, ..., C.S. Bennett, et al. "MOA-2010-BLG-523: 'Failed planet' = RS CVn star." 1 Feb. 2013, *The Astrophysical Journal*, 763:141
- E. Bachelet, ..., C.S. Bennett, et al. "MOA 2010-BLG-477Lb: Constraining the mass of a microlensing planet from microlensing parallax, orbital motion, and detection of blended light." 20 Jul. 2012, *The Astrophysical Journal*, 754:73
- J.-Y. Choi, ..., C.S. Bennett, et al. "Characterizing lenses and lensed stars of high-magnification single-lens gravitation microlensing events with lenses passing over source stars." 20 May 2012, *The Astrophysical Journal*, 751:41
- Y. Muraki, ..., C.S. Bennett, et al. "Discovery and mass measurements of a cold, 10-Earth mass planet and its host star." 12 Oct. 2011. *The Astrophysical Journal*, 741:22
- Adam J. Burgasser, ..., Clara S. Bennett, et al. "2MASS J09393548-2448279: The coldest and least luminous brown dwarf binary known?" 10 Dec. 2008. *The Astrophysical Journal Letters*, 689:L53- L56