

Christopher N. Beaumont

Curriculum Vitae

Contact

Senior Software Engineer

Harvard-Smithsonian Center for Astrophysics
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Cambridge, MA 02138
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<http://www.chrisbeaumont.org>
<http://github.com/ChrisBeaumont>

Education

Institute for Astronomy, University of Hawai'i at Manoa Honolulu, HI

Ph.D Astronomy

January 2014

Dissertation Topic:

Morphological Diagnostics of Star Formation in Molecular Clouds (*Advisors: Jonathan P. Williams and Alyssa A. Goodman*)

Institute for Astronomy, University of Hawai'i at Manoa Honolulu, HI

M.S. Astronomy

Fall 2009

Research:

Molecular Rings around Interstellar Bubbles, and the Thickness of Star Forming Clouds (*Advisor: Jonathan P. Williams*)

Astrometric Data Analysis in the Era of All Sky Surveys (*Advisor: Eugene A. Magnier*)

Calvin College Grand Rapids, MI

B.S. Physics

May 2007

Minors in Mathematics and Astronomy

GPA 3.94 (Overall), 3.99 (Major)

Graduated with Honors

Employment

11/2013-Present

Harvard-Smithsonian Center for Astrophysics

Senior Software Engineer

02/2014-Present

Paradigm4, Inc.

Contract Software Engineer: SciDB-Py development

06/2013–12/2013

Harvard School of Engineering and Applied Science

Head Teaching Fellow for CS109: Data Science

09/2010–11/2013

Harvard-Smithsonian Center for Astrophysics

Predocutorial Research Fellow (*Advisor: Alyssa A. Goodman*)

- 09/2007–11/2013 **University of Hawai'i at Manoa**
Undergraduate astronomy T.A. and Lab Assistant (9/2007 – 5/2008)
Research Assistant (*Advisor: Jonathan P. Williams*)
Research Assistant (*Advisor: Eugene A. Magnier*)
- 01/2012–06/2012 **Harvard University**
Teaching Fellow, EMR 19 *The Art of Numbers*
An undergraduate-level data visualization course for non-science majors
Professor: Alyssa Goodman
- 01/2011–06/2011 **Harvard-Smithsonian Center for Astrophysics**
Teaching Fellow, AY 201B *The Interstellar Medium*
Graduate-level course on the interstellar medium and star formation
Professor: Alyssa Goodman
- 06/2006–08/2008 **MIT Haystack Observatory**
REU Student
Title: SiO Masers in the Orion BN-KL Outflow
Advisor: Shep Doeleman
- 06/2005–08/2005 **National Solar Observatory**
REU Student
Title: Supernovae Detection Techniques for Small Robotic Telescopes
Advisor: Mark Giampapa
- 09/2003–05/2007 **Calvin College**
Physics, Astronomy, and Mathematics Tutor
Observatory Assistant
Head Student Observer (2004–2005)
Physics Lab Assistant / Grader
- Honors**
- University of Hawaii University Research Council Award*
Awarded in 2012
- ARCS (Achievement Rewards for College Scientists) Foundation – Honolulu Chapter*
Awarded in 2012
Also named Honolulu-ARCS Scholar of the Year in 2012
- Harvard Institute for Applied Computational Science:*
2012 Computational Challenge Winner
Awarded in 2012 for developing a new, efficient strategy for clearing debris off city roads after natural disasters.
- PiCloud Academic Research Grant*
Awarded in 2011
- Smithsonian Astrophysical Observatory Predoctoral Fellowship*
Awarded in 2011
- Friends of the IfA Award for Excellent Masters-Level Research*

Awarded in 2008

Barry M. Goldwater Scholarship Honorable Mention

Awarded in 2006

Calvin College McGregor Sophomore Scholar

Awarded in 2004

Calvin College Presidential Scholarship

Awarded in 2003

Howard Hughes Medical Institute Scholarship

Awarded in 2003

Publications

Journal Papers

“The Milky Way Project: Leveraging Citizen Science and Machine Learning to Detect Interstellar Bubbles”

Beaumont, Christopher N.; Goodman, Alyssa A.; Kendrew, Sarah; Williams, Jonathan P. 2014 ApJS, in press.

“Quantifying Observational Projection Effects Using Molecular Cloud Simulations”

Beaumont, Christopher N.; Offner, Stella S.R., Shetty, Rahul; Glover, Simon C.; Goodman, Alyssa A. 2013 ApJ, 777, 173B

“A Simple Perspective on the Mass-Area Relationship in Molecular Clouds”

Beaumont, Christopher N.; Goodman, Alyssa A.; Alves, João F.; Lombardi, Marco; Román-Zúñiga, Carlos G.; Kauffmann, Jens; Lada, Charles J. 2012 MNRAS 423, 2579

“The linewidth-size relationship of dense structures in the Central Molecular Zone”

Shetty, Rahul; **Beaumont, Christopher N.**; Burton, Michael G; 2012 MNRAS 425, 720

“A Bubbling Nearby Molecular Cloud: COMPLETE Shells in Perseus”

Arce, Hector G.; Borkin, Michelle A.; Goodman, Alyssa A.; Pineda, Jaime E.; **Beaumont, Christopher N.** 2011, ApJ, 742, 105

“Classifying Structures in the ISM with Support Vector Machines:

The G16.05-0.57 Supernova Remnant”

Beaumont, Christopher N.; Williams, Jonathan P.; Goodman, Alyssa A. 2011, ApJ, 741, 14B

“Building an Optimal Census of the Solar Neighborhood with Pan-STARRS Data”

Beaumont, Christopher N.; Magnier, Eugene A. 2010, PASP, 122, 1389

“Molecular Rings around Interstellar Bubbles and the Thickness of Star-Forming Clouds”

Beaumont, Christopher N.; Williams, Jonathan P. 2010, ApJ, 709, 791

“Discerning the Form of the Dense Core Mass Function”

Swift, Jonathan J.; **Beaumont, Christopher N.** 2010, PASP, 122, 224

“Diverse Protostellar Evolutionary States in the Young Cluster AFGL961”

Williams, J. P.; Mann, R. K.; **Beaumont, C. N.**; Swift, J. S.; Adams, J. D.; Hora, J.; Kassis, M.; Lada, E. A.; Roman-Zuniga, C. G. 2009, ApJ, 699, 1300-1306

“Lightcurve Analysis of a Magnitude Limited Asteroid Sample”
Molnar, L.A.; Haegert, M.J.; **Beaumont, C.N.** et al. 2008 Minor Planet Bulletin 35, 9M

Conference Presentations

“Hackable User Interfaces and the Future of Data Visualization in Astronomy”
Beaumont, Christopher N.
2014 September Seamless Astronomy Colloquium, Harvard University

“Hackable User Interfaces with Glue”
Beaumont, Christopher N.
2014 Boston DataCon, Microsoft NERD Center

“Exploratory Data Visualization with Glue”
Beaumont, Christopher N.
2014 Harvard-Heidelberg Conference on Star Formation, Models, and Visualization

“Data Analysis with SciDB-py”
Beaumont, Christopher N.; Poliakov, Alex
2014 PyData Conference, Menlo Park, CA

“Multidimensional Data Exploration with Glue”
Beaumont, Christopher N.; Goodman, Alyssa A; Robitaille, Thomas P; Borkin, Michelle A
2013 SciPy Conference, Austin, TX

“Linked Data Visualization in Astrophysics”
Beaumont, Christopher N.; Goodman, Alyssa A; Borkin, Michelle A; Robitaille, Thomas P
NRAO ALMA Software Workshop 2011

“Classifying Structures in the ISM with Machine Learning Techniques”
Beaumont, Christopher N.; Goodman, Alyssa A; Williams, Jonathan P. AAS 2011

“SiO Masers in the Orion BN-KL Outflow”
Beaumont, Christopher N.; Doleman, Sheperd S. AAS 2007