

Damien Robertson

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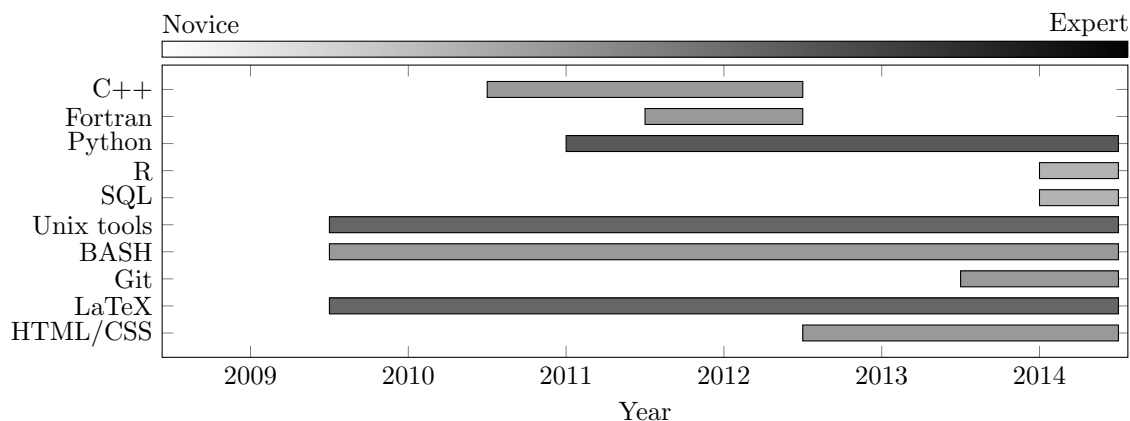
robertsondamien@gmail.com
<http://astronomerdamo.github.io/>
<https://github.com/astronomerdamo>

Career Objectives

I am very interested in numerical and scientific computation including data analysis and interpretation. I'm constantly looking for challenging projects that may help others use information better.

Profile

- B.Sc., M.Sc. degree in physics and astronomy.
- Coding experience with C/C++, Python, Bash, and Fortran on UNIX/MAC systems using git version control.
- Familiar with database programs, SQL, and statistical language R.
- Advanced problem solving, troubleshooting and self-directed learning skills.
- Curious, self-motivated, and capable of understanding complex phenomenon quickly.
- Well versed in numerical, signal, and statistical analysis using various techniques including computer vision and image processing.
- Experience with scientific technical writing and technical presentations.
- Three published scientific articles including one as lead author.
- Participated in international collaborations with physicists, astronomers, and engineers.



Education

- **McMaster University** Hamilton, ON
M.Sc. Physics and Astronomy Sept. 2012 - Aug. 2014
 - Thesis: Prestellar Cores in Perseus
- **Saint Mary's University** Halifax, NS
B.Sc. Honours, Astrophysics (Summa Cum Laude) Sept. 2008 - May 2012
 - Thesis: Searching for Correlation in UV and X-ray Emission in the AGN 1H0707-495
- **Algonquin College** Ottawa, ON
Diploma - Business Marketing Sept. 2004 - May 2006
 - Practical applications of marketing including research, advertising and plan implementation.

Research Experience

McMaster University - Hamilton, ON
Sept. 2012 - Aug. 2014

- Combined multi-wavelength, multi-instrument infrared, and radio observations of star forming regions in two and three dimensions using a combination of Python scripts and PyPi packages.
- Setup, maintained, and queried SQL databases of pre-stellar sources.
- Evaluated source finding algorithms, performed, and tabulated statistical tests in R and Python.
- Created and maintained Python programs for source finding and structure identification in two and three dimensional data sets.

Tri-University Meson Facility, TITAN - Vancouver, BC
May 2011 - Aug. 2011

- Designed, fabricated, and tested an electrostatic ion barrier gauge to improve detector performance.
- Maintained, tested ultra high vacuum components, and implemented new vacuum pump in beam line.
- Team member in two mass measurement experiments along with routine equipment maintenance.

Saint Mary's University - Halifax, NS
May 2009 - Sept. 2012

- Processed X-ray and UV observations of active galaxies using data reduction pipelines in BASH, C++.
- Created and maintained bulk data sets, mined data for exploration, and quantity correlation.
- Created a Python program to correlate unevenly sampled light curves based on the discrete correlation function algorithm.
- Published paper on time series analysis, worked based on undergraduate thesis.
- Created *N-body* code from scratch to simulate the evolution of the solar system with and without the Jovian planets.

Teaching and Outreach

- McMaster University Hamilton, ON
William J. McCallion Planetarium - Dr. Robert Cockcroft Apr. 2013 - Ongoing
 - Public outreach
 - Created original presentations, performed them for private and public audiences and a wide range of ages.
- McMaster University Hamilton, ON
Teaching Assistant - Neil McKay Sept. 2013 - Apr. 2014
 - System administrator for Physics department undergraduate testing software.
 - Addressed login problems, student marking and managed course and quiz work.
- McMaster University Hamilton, ON
Teaching Assistant - Dr. Laura Parker Sept. 2012 - Dec. 2012, Sept. 2013 - Dec. 2013
 - Astronomy: Big Questions (AST 2B03)
 - Mediated student discussion, graded student presentations and assignments.
- McMaster University Hamilton, ON
Teaching Assistant - Neil McKay Dec. 2013 - Apr. 2013, Dec. 2014 - Apr. 2014
 - Astronomy: Physics for Life Sciences (PHY 1L03)
 - Taught two hour tutorial course, maintained office hours for questions and administered student quizzes.
- Saint Mary's University Halifax, NS
Burke Gaffney Observatory Tour Guide - David Lane May 2010 - Apr. 2012
 - Public outreach
 - Responsible for guiding public audiences, speaking about different tools and aspects of the observatory and addressing any questions.

- Saint Mary's University Halifax, NS
Teaching Assistant - Dr. David Turner Jan. 2011 - Apr. 2011
 - Introduction to Astronomy (ASTR 1000).
 - Responsible for grading student assignments throughout the semester.
- Saint Mary's University Halifax, NS
Teaching Assistant - Jodi Asbell-Clarke Sept. 2009 - Dec. 2009
 - Astronomy: Life in the Universe (ASTR 1010).
 - Responsible for grading student assignments throughout the semester.

Awards

- NSERC Canada Graduate Scholarships - 2013
- Entrance Scholarship - McMaster University - 2012
- Outstanding Talk - Eighth Annual SMU Undergraduate Mini-Symposium - 2011
- TRIUMF Summer Research Award - Atlantic Region - 2011
- CUPC, Second Place - Astrophysics Category (Talk) - 2010
- NSERC Undergraduate Student Research Award winner - 2010
- Atlantic University Physics and Astronomy Conference, Honourable Mention (Talk) - 2010
- Achievement Scholarship (SMU) - 2009 - 2012
- William N. Duggan Memorial Scholarship - 2009
- William Chisholm Scholarship - 2009
- Outstanding Talk - Sixth Annual SMU Undergraduate Mini-Symposium - 2009
- Dean's List (SMU) - 2008 - 2011

Professional References

- Dr. Christine Wilson wilson@physics.mcmaster.ca
McMaster University, Professor, Astronomy/Physics (905) 525-9140 x27483
 - Dr. Luigi Gallo lgallo@ap.smu.ca
Saint Mary's University, Professor, Astronomy/Physics (902) 420-5637
 - Dr. Rituparna Kanungo rkanungo@ap.smu.ca
Saint Mary's University, Associate Professor, Astronomy/Physics (902) 420-5428
 - Andrew Valencik andrew@cs.smu.ca
Saint Mary's University, System Administrator, Computing Science (902) 420-5893
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