Andrew Connolly

Education and Training

Imperial College, University of London, Ph.D. (Physics and Astronomy), 1993
Imperial College, University of London; Physics; B.Sc. (First Class Honors) 1988

Research and Professional Experience

2011 – present, Professor, University of Washington, Seattle, WA
2011 – 2012, Visiting Faculty (Exacycle Program), Google, Seattle, PA
2007 – 2011, Associate Professor, University of Washington, Seattle, WA
2006 – 2007, Visiting Faculty (Development of Google Sky), Google, Pittsburgh, PA
2004 – 2006, Associate Professor, University of Pittsburgh, Pittsburgh, PA
1999 – 2004, Assistant Professor, University of Pittsburgh, Pittsburgh, PA
1995 – 1999, Associate Research Scientist, Johns Hopkins University, Baltimore, MD
1992 – 1994, Postdoctoral Fellow, Johns Hopkins University, Baltimore, MD

Selected Relevant Publications

[1] vanderPlas, J., Connolly, A.J., Jain, B., and Jarvis. M., "Interpolating Masked Weak-lensing Signal with Karhunen-Loève Analysis", 2012, ApJ, 744, 180
[2] Wiley, K., Connolly, A.J., Gardner J., Krughoff, K.S., Balazinska, M., Howe, B., Kwon Y., and Bu, Y., "Astronomy in the Cloud: Using MapReduce for Image Coaddition", 2011, PASP, 123, 366
[3] Connolly, A.J., Peterson, J., Jernigan, J.G., Abel, R., Bankert, J., and 18 colleagues, "Simulating the LSST System", Proceedings of SPIE Vol. 7737 (2010)
[4] D. Suciu, A. Connolly, and B. Howe, "Embracing Uncertainty in Large- Scale Computational Astrophysics", in MUD, 2009, pp. 63–77.
[5] Stabenau, H. F., Connolly, A., and Jain, B., "Photometric redshifts with surface brightness priors", MNRAS, 387, 1215 (2009)
[6] Vanderplas, J. and Connolly, A., "Reducing the Dimensionality of Data: Locally Linear Embedding of Sloan Galaxy Spectra", 2009, AJ, 138, 1365
[7] Connolly, A., Scranton, R. and Ornduff, T., "Google Sky: A Digital View of the Night Sky", 2008, ASPC, 400, 96
[8] Kubica, J., Moore, A. & Connolly, A.J., "Efficient Trajectory Based Spatial Queries", The Eleventh ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (2005)
[9] Yip, C. W., Connolly, A. J., Vanden Berk, D. E., Ma, Z., Frieman, J. A., SubbaRao, M., Szalay, A. S., Richards, G. T., Hall, P. B., Schneider, D. P., and 12 colleagues, "Spectral Classification of Quasars in the Sloan Digital Sky Survey: Eigenspectra, Redshift, and Luminosity Effects", AJ, 128, 2603 (2004)
[10] Connolly, A. J., Scranton, R., Johnston, D., Dodelson, S., Eisenstein, D. J., Frieman, J. A., Gunn, J. E., Hui, L., Jain, B., Kent, S., and 48 colleagues, "The Angular Correlation Function of Galaxies from Early Sloan Digital Sky Survey Data", ApJ, 579, 42 (2002)

Synergistic Activities

[1] Committees and Panels: Image Simulation Scientist for LSST; software and computing coordinator for Dark Energy Science Collaboration, member of the LSST Science Council; board member of Pacific Northwest Gigapop; board member of Astronomy and Computing journal, member of Physics advisory panel for arXiv; member of NSF and NASA review and senior review panels; science organizing committee for LSST@Europe 2013, AstroViz 2011, Astroinformatics 2010

[2] Outreach Led the development of Sky in Google Earth (aka "Google Sky") while on sabbatical at Google; a framework for exploring the sky. Google Sky was one of the most successful releases of software in the history of Google. Developed an affordable planetarium system with Microsoft and World Wide Telescope.

[3] Community Support Developer of fast algorithms for data mining of large astronomical data sets. Software for the implementation of these algorithms are made available through the INCA collaboration. Co-author of a book on data analytics for astronomy (which includes Python software for the analysis of large and complex data sets) "Statistics, Data Mining and Machine Learning in Astronomy: A Practical Python Guide for the Analysis of Survey Data", Princeton University Press, to appear in 2013.

[4] Teaching PhD advisor for ten graduate students, research adviser for 14 undergraduate students including students supported under an NSF funded REU program for underrepresented groups in astrophysics. Co-creator and co-lecturer for a joint Pitt/CMU Ph.D. course for students from Computer Science, Statistics, Physics and Biology: "Computational Statistics of Multidimensional Scientific Databases".

Collaborators & Co-Editors

Tim Axelrod (U of Arizona), Tamas Budavari (JHU), Josh Frieman (U of Chicago), Jeff Gardner (U Washington), Chris Genovese (Carnegie Mellon), Hans F. Stabenau (U Pennsylvania), Andrew Hopkins (U of Sydney), Bhuvnesh Jain (U Pennsylvania), Robert Jedicke (University of Hawaii), Simon Krughoff (U Washington), Jeremy Kubica (Google), Robert Lupton (Princeton University), Andrew Moore (Google), Bob Nichol (U Portsmouth), Gordon Richards (Drexel University), Ryan Scranton (Google), Sam Schmidt (UC Davis), Jeff Schneider (Carnegie Mellon), Ravi Sheth (U Pennsylvania), Michael Schneider (UC Davis), Mark Subbarao (U of Chicago), Alex Szalay (JHU), Istvan Szapudi (University of Hawaii), Tony Tyson (UC Davis), Larry Wasserman (Carnegie Mellon), Niraj Welikala (U of Pittsburgh), Ching-Wa Yip (JHU)

Graduate and Postdoctoral Advisors and Advisees&

[1] Graduate and Postdoctoral Advisors Alex Szalay (Johns Hopkins), Bob Joseph (U. of Hawaii)

[2] Postdoctoral Advisees Joerg Colberg (Carnegie Mellon), Alberto Conti (STScI), Scott Daniel (UW), Jeff Gardner (UW), Rob Gibson (UW), Andrew Hopkins (U of Sydney), Diego Marcos (UW), Simon Krughoff (UW), James Pizagno (UW), Ryan Scranton (Davis), Nicole Silvestre (UW), Dan vanden Berk (Penn State), Keith Wiley (UW)

[3] Graduate Student Advisees Yusra AlSayyad (UW), Robert Brunner (U Illinois), Jeremy Brewer (U of Pittsburgh), Tamas Budavari (JHU), Cameron McBribe (U of Pittsburgh), Sam Schmidt (UC Davis), Gyula Szokoly (Max-Planck fur Extraterrestrische Physik), Jake VanderPlas (UW), Niraj Welikala (U of Pittsburgh), Ching-Wa Yip (JHU).