

Remington Oliver Sexton, Ph.D.

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[Personal Website](#), [LinkedIn Profile](#), [GitHub Profile](#)

Summary

- Performing statistical data analysis and implementing machine learning algorithms on large astronomical datasets.
- Proficiency in scientific programming languages, including C++, IDL, and Python, with 8+ years of experience using Python libraries including Numpy, Pandas, Scipy, and Scikit-Learn
- Lead software development experience writing algorithms to perform detailed statistical analysis on large datasets.
- Proficient technical writing and communication skills with 7+ years university teaching experience.
- Author of 6 publications.

Education

University of California, Riverside

Ph.D. Physics

Sept. 2020

Thesis: Better Constraints for the $M_{\text{BH}} - \sigma_*$ Relation in the Non-Local Universe & Correlations of Ionized Gas Outflows with AGN and Host Galaxy Properties

University of California, Riverside

M.S. Physics

Jan 2015

California State Polytechnic University, Pomona

B.S Physics

Sept. 2008-June 2013

Thesis: Extended red objects and stellar wind bow shocks in the Carina Nebula

Publications

- **Sexton, R.O.**, et al. (2020) submitted to MNRAS, "Bayesian AGN Decomposition Analysis for SDSS Spectra"
- **Sexton, R.O.**, Canalizo, G., Hiner, K.D., Komossa, S., Woo, J.-H., and 2 others, "Stronger Constraints on the Evolution of the $M_{\text{BH}} - \sigma_*$ Relation up to $z \sim 0.6$ ", *The Astrophysical Journal*, Volume 878, Issue 2, article id. 101, 27 pp. (2019). <https://ui.adsabs.harvard.edu/abs/2019ApJ...878..101S>
- **Sexton, R.O.**, Povich, M.S., Smith, N., Babler, B.L., Meade, M.R., and Rudolph, A.L., "Extended red objects and stellar-wind bow shocks in the Carina Nebula", *Monthly Notices of the Royal Astronomical Society*, Volume 446, Issue 1, p.1047-1059, (2015). <https://ui.adsabs.harvard.edu/abs/2015MNRAS.446.1047S>
- Cann, J.M., Satyapal, S., Bohn, T., **Sexton R.O.**, and 6 others, "Multiwavelength Observations of SDSS J105621.45+313822.1, a Broad-line, Low-metallicity AGN", *The Astrophysical Journal*, Volume 895, Issue 2, (2020). <https://ui.adsabs.harvard.edu/abs/2020arXiv200411295C/abstract>
- Pfeifle, R.W., Satyapal, S., Manzano-King, C., Cann, J., **Sexton, R.O.**, and 9 others, "A Triple AGN in a Mid-infrared Selected Late-stage Galaxy Merger", *The Astrophysical Journal*, Volume 883, Issue 2, article id. 167, 11 pp. (2019). <https://ui.adsabs.harvard.edu/abs/2019ApJ...883..167P>
- Zheng, W., Filippenko, A.V., Mauerhan, J., Graham, M.L., Yuk, H., Hosseinzadeh, G., Silverman, J.M., Rui, L., Arbour, R., Foley, R.J., Abolfathi, B., Abramson, L.E., Arcavi, I., Barth, A.J., Bennert, V.N., Brandel, A.P., Cooper, M.C., Cosens, M., Fillingham, S.P., Fulton, B.J., Halevi, G., Howell, D.A., Hsyu, T., Kelly, P.L., Kumar, S., Li, L., Li, W., Malkan, M.A., Manzano-King, C., McCully, C., Nugent, P.E., Pan, Y.-C., Pei, L., Scott, B., **Sexton, R.O.**, and 7 others, "Discovery and Follow-up Observations of the Young Type Ia Supernova 2016coj", *The Astrophysical Journal*, Volume 841, Issue 1, article id. 64, 12 pp. (2017). <https://ui.adsabs.harvard.edu/abs/2017ApJ...841...64Z>

Experience & Projects

University of California, Riverside Extension

Course Instructor

July 2020 - Present

- Instructor for Introduction to Data Science course. Teaching data science, analysis, and machine learning techniques to university level students.

University of California, Riverside

Graduate Research Assistant

Sept 2014 - July 2020

- **Constraining the $M_{\text{BH}} - \sigma_*$ Relation in the Non-local Universe**
 - Developed specialized data reduction and analysis pipelines for Keck/LRIS spectroscopy and Hubble Space Telescope imaging
- **Bayesian AGN Decomposition Analysis for SDSS Spectra (BADASS)**
 - Lead software developer of BADASS spectroscopic analysis pipeline (<https://github.com/remingtonsexton/BADASS2>)
 - Fully automated and scalable spectroscopic analysis pipeline using Bayesian Markov-Chain Monte Carlo and autocorrelation analysis techniques implemented in Python
- **Discovery of Triple AGN in Late-Stage Galaxy Merger**
 - Performed optical spectroscopic analysis on SDSS and Large Binocular Telescope data in collaboration with George Mason University.
 - Discovery featured by [NASA](#), [CNN](#), [Fox News](#), [The Register \(UK\)](#), [Phys.org](#), [GIZMODO](#)
- **Lick AGN Monitoring Project (LAMP)**
 - Performed multi-night observations for LAMP reverberation mapping campaign
 - Assisted in discovery of Type Ia supernova 2016coj
- **AGN Outflows in SDSS Galaxy Pairs**
 - Mentored graduate student in data analysis techniques in collaboration with George Mason University
 - Implemented BADASS software for use in large cluster environment to fit +10,000 spectra.
- **Teaching Assistant**
 - 5 years university teaching experience in various physics and astronomy courses
 - Awarded outstanding teaching assistant for two consecutive years and the department teaching award

California State Polytechnic University, Pomona

Undergraduate Researcher

Sept. 2011 - Aug. 2013

- Performed photometric analysis on Spitzer Space Telescope imaging of the Carina Nebula
- Advised other undergraduate students performing astronomy research

Key Skills

Programming Languages	Python, C++, IDL
Database Management Systems	SQL

Awards & Achievements

- Dissertation Year Program Fellowship 2019-2020
- Robert T. Wild Physics Prize Award for Excellence in Teaching, Department of Physics and Astronomy, September 26, 2017
- Fellowships & Internships in Extremely Large Data Sets (FIELDS) 2016-2017 Graduate Student Fellowship.
- Outstanding Teaching Assistant Award, Department of Physics and Astronomy, May 26, 2016
- Outstanding Teaching Assistant Award, Department of Physics and Astronomy, June 12, 2015