



Jeremy S. Ritter, Ph.D.

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Data Scientist | Software Developer | Astrophysicist

Web: <https://grapenut.github.io> Google Scholar: https://bit.ly/jr_scholar

LinkedIn: https://bit.ly/jr_linked GitHub: <https://github.com/grapenut>

Texas-native data scientist with 8+ years experience developing parallel HPC simulations and analyzing massive datasets with state-of-the-art numerical methods. Experienced at optimizing parallel algorithms across 1000+ GPU-accelerated compute processes, applying advanced clustering and non-linear modeling techniques to gain deeper insight from high-dimensional datasets, and reducing multi-terabyte distributed data to create stunning visualizations. I am eager to transition the parallel computing and data science skills developed as a Doctor of Philosophy in Astrophysics towards optimizing next-generation GPU-accelerated deep learning networks.

Data Science Experience

Personal Property Taxes	May	
• Acquired property tax data for the entire subdivision using automated web-scraping and XML parsing of the Travis County Central Appraisal District website.	2018	
• Employed clustering to find similar properties and regression to learn the expected values.		
• Proved my tax burden was overvalued by 7%.		

Professional Experience

Graduate Research Assistant	May	Aug
<i>The University of Texas at Austin</i>	2010	2018
• Developed HPC simulations that produced multi-terabyte datasets.		
• Converted simulation data between multiple binary and text data formats for analysis.		
• Reduced data to create visualizations for publication in scientific journals.		
Network Operations Engineer	Jun	Aug
<i>CoreNAP / The Zayo Group</i>	2007	2014
• Automated provisioning of networking and computing resources, advanced shell scripting.		

Accomplishments

3 first author scientific publications that have acquired 130+ citations.	Dec	Aug
	2012	2016
Invited to speak to financial investors at the Astronomy Board of Visitors Meeting.		Feb
		2015
Won Best Second Year Defense Award out of all Astronomy graduate students.	May	
	2014	

Data Science Skills

Mastery of scientific programming	10+
<i>C/C++, Fortran, Java, Python</i>	years
Parallel supercomputing	8+
<i>MPI, OpenMP, GPU-accelerated math libraries</i>	years
Python SciPy stack	4+
<i>Numpy, Pandas, Matplotlib, Scikit-learn</i>	years
Data regression and classification	4+
<i>Neural networks, optimized gradient descent, hyperparameter cross-validation</i>	years
Data formats and query languages	10+
<i>text/CSV, HDF5, JSON, SQL</i>	years
Deep learning and computer vision	6+
<i>TensorFlow, Keras, OpenCV</i>	months

Technical Skills

Linux/Unix administration	15+
<i>Cloud computing/AWS, advanced scripting</i>	years
Web development	15+
<i>HTML/CSS/Javascript, Node, AngularJS, React</i>	years
Scientific communication	6+
<i>Teaching, publishing, public speaking</i>	years

Education

The University of Texas at Austin	Aug
<i>Doctor of Philosophy in Astrophysics</i>	2018
The University of Texas at Austin	Dec
<i>Bachelor of Science in Physics</i>	2011
<i>Bachelor of Science in Astronomy</i>	