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 2018

- Acquired property tax data for the entire subdivision using automated web-scraping and XML parsing of the Travis County Central Appraisal District website.
- 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 2010 - Aug 2018
The University of Texas at Austin

- 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 2007 - Aug 2014
CoreNAP / The Zayo Group

- Automated provisioning of networking and computing resources, advanced shell scripting.

Accomplishments

3 first author scientific publications that have acquired 130+ citations. — Dec 2012 - Aug 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 *C/C++, Fortran, Java, Python*	10+ years
Parallel supercomputing *MPI, OpenMP, GPU-accelerated math libraries*	8+ years
Python SciPy stack *Numpy, Pandas, Matplotlib, Scikit-learn*	4+ years
Data regression and classification *Neural networks, optimized gradient descent, hyperparameter cross-validation*	4+ years
Data formats and query languages *text/CSV, HDF5, JSON, SQL*	10+ years
Deep learning and computer vision *TensorFlow, Keras, OpenCV*	6+ months

Technical Skills

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

Education

The University of Texas at Austin — Aug 2018
Doctor of Philosophy in Astrophysics

The University of Texas at Austin — Dec 2011
Bachelor of Science in Physics
Bachelor of Science in Astronomy