Weitian LI

🔭 Data Analyst @ Shenzhen

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🎓 PhD (candidate), Physics 🏛 Shanghai Jiao Tong University (SJTU)

📍 Shanghai 🏠 Shaoyang, Hunan ♒ September 26, 1991

Highly-motivated PhD candidate in Physics with good foundations of math and statistics, and familiar with the basics of machine learning as well as signal and image processing. Enthusiastic about computer technologies with 10 years experience in Linux and BSD, and involved in several open source projects (e.g., DragonFly BSD). Skilled in programming (Python, R, etc.) and data analysis, and looking to fill a position as a Data Analyst at your company that I can grow with as I achieve company goals.

🔧 Competences

Operating Systems	Linux (10 years), BSD (DragonFly BSD, FreeBSD; 7 years)
Programming	Python, Shell, C; R, Julia
Data Analysis	R, pandas, scikit-learn; matplotlib, ggplot2; SQL (basic knowledge)
Tools	Regular expression; Jupyter Notebook; SSH, Git, Make; Ansible
Web Development	Django, Tornado; jQuery, Bootstrap; JavaScript, HTML5
Typesetting	LaTeX, ConTeXt

🎓 Education

present September 2013	School of Physics and Astronomy, **Shanghai Jiao Tong University** PhD (candidate; expected to graduate in early 2019) in Physics
June 2013 September 2009	Department of Physics and Astronomy, **Shanghai Jiao Tong University** Bachelor's Degree in Applied Physics

⚙ Research Projects

present January 2015	**Simulation of Low-Frequency Radio Sky and Separation of Weak Astronomical Signals** Key Program, National Natural Science Foundation of China

> Developed the low-frequency radio sky simulation software: `FG21sim`.
> Significantly improved the modeling of radio halos, and integrated the instrumental effects of radio interferometers.
> Quantitatively evaluated the impacts of radio halos on reionization signal detection, and finished the journal paper.
> Collaborated in classifying the radio galaxies by morphologies using a deep convolutional neutral network.
> Used algorithms such as wavelet to denoise and enhance X-ray astronomical images.
> Extracted both the spatial and spectral information of X-ray images, and used the support vector machine (SVM) to identify the potential point sources.

🏷 Machine learning CNN SVM Image processing Python

December 2014 July 2012	**The X-ray Study of Galaxies and Clusters of Galaxies, and the Research of Cosmic Low-Frequency Radio Radiation** Fund for Distinguished Young Scholars, National Natural Science Foundation of China

> Reduced the data of over 200 galaxy clusters observed by the *Chandra* X-ray Observatory, and analyzed the images and spectra.
> Built a sample of galaxy clusters, collected optical data from SDSS, and investigated the correlation between the central emission excess and the central dominating galaxy.
> Developed and maintained a suite of data analysis utilities: `chandra-acis-analysis`.

🏷 Data collection Data reduction Statistical analysis Python Shell

💼 Experience

April 2018	Attended "The 2nd China-Australia SKA Big Data Workshop." ⟩ Implemented the data transmission functionality between the NGAS data storage system and the DALiuGE data processing system. ⟩ Learned team collaboration and agile development methods. 🏷 `Data transmission` `Data storage` `Agile development` `Python`
March 2018	Became a DragonFly BSD committer. 🏷 `BSD` `Open source`
March 2018	Used Ansible to manage the VPS configurations, and hosted authoritative DNS service for personal domains. 🏷 `BSD` `Ansible` `DNS`
February 2018	Revised "The Chinese SKA Science White Book" by rewriting the "Low-Frequency Observation Instruments" section.
December 2017	Participated in configuring and testing the high-performance computing cluster prototype for building the SKA Regional Science Center at Shanghai Astronomy Observatory.
September 2017	Involved in writing the "Large-scale Diffuse Foreground Sources" section in "The Chinese SKA Science White Book."
August 2017 April 2017	Lung CT scan images analysis ⟩ Collaborated with *Shanghai Chest Hospital*, attempted to identify the mutation types of lung tumors by analyzing the CT scan images, in order to formulate a better treatment plan. ⟩ Extracted the image features using the Gray Level Concurrence Matrix (GLCM) and reduced with Principle Component Analysis (PCA), but found that the information provided by the CT images was insufficient to reliably predict the mutation types. 🏷 `Feature extraction` `Data reduction` `PCA`
April 2017	Configured a VPS running DragonFly BSD and serving personal email, website, CalDAV/CardDAV, Git, etc. 🏷 `BSD` `Postfix` `Dovecot` `Nginx` `Radicale` `Git`
December 2016	Built and administrated a 4-node computer cluster for the team to research the galaxy cluster merger processes by carrying out hydrodynamic simulations. 🏷 `CentOS` `Slurm` `Numerical simulation`
November 2016	Attended "BSD Meetup: BSD & Cloud" @ Shanghai. 🏷 `BSD` `Open source`
September 2016	Participated "The 13th China Post-Graduate Mathematical Contest in Modeling." ⟩ Learned the Genome-Wide Association Study (GWAS) method to locate the most likely Single-Nucleotide Polymorphisms (SNPs) associated with a trait or disease. ⟩ Used the R programming language to perform Logistic regressions and hypothesis testings between the SNP codes and traits, and identified the most possible SNPs and genes that may cause the disease. 🏷 `R` `Regression analysis` `Hypothesis testing`
July 2014 April 2014	Organized "The 1st China–New Zealand Joint SKA Summer School." ⟩ Designed and made the poster. ⟩ Designed and developed the website, providing functionalities including user registration, agenda management, announcements, lecture downloads, etc. 🏷 `Design` `Django` `Bootstrap` `jQuery` `JavaScript` `MySQL`
September 2013 July 2013	Summer intern @ 97 Suifang ⟩ Developed the website to help patients with *hepatitis B* track various indicators in their analysis reports. ⟩ Implemented the user registration, data storage and search functions in the back end. ⟩ Used AJAX in the front end to visualize the temporal variations of the indicators. 🏷 `Database` `Data visualization` `Django` `AJAX`

| September 2011 | Involved in the Open Source Association of school |
| March 2010 | 🏷 Open source Linux |

🈯 Languages

English	**Reading** — Intermediate (read textbooks and literature)
	Writing — Intermediate (write journal papers)
	Listening & Speaking — Conversant
Chinese	**Writing** — Good (involved in writing Fund Applications, annual reports, as well as writing and revising sections for "The Chinese SKA Science White Book")
	Speaking — Good (5 semesters of teaching assistant experience)

👥 Teaching Assistant

Spring 2017	The Universe Around Us (liberal education)
Fall 2015	Introduction to Physics II (Zhiyuan Honors Program)
Spring 2015	Introduction to Physics I (Zhiyuan Honors Program)
Fall 2014	Introduction to Physics I (Zhiyuan Honors Program)
Spring 2014	College Physics (Outstanding Teaching Assistant Award)

🏆 Awards & Certificates

September 2016	Participation Award, The 13th China Post-Graduate Mathematical Contest in Modeling
November 2013	Outstanding PhD Student Entrance Scholarship of Shanghai Jiao Tong University
October 2012	Advanced Individual of Shanghai Jiao Tong University
December 2011	National Astronomical Observatory Scholarship
September 2011	Network Engineer (Level 4), National Computer Rank Examination