Weitian LI

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Ph.D. in Physics Shanghai Jiao Tong University (SJTU) 1991 Sept. Shanghai

Highly-motivated Ph.D. in Physics (radio astronomy) with good foundations of math and statistics. Proficient in data modeling and analysis, and enthusiastic about computer and network technologies. With 10 years experience in Linux and BSD, skilled in Shell, Python, and C programming. Passionate about open source and share multiple projects on my GitHub. Meanwhile a DragonFly BSD operating system developer and a contributor to several other open source projects.

Competences & Languages

Operating Systems	Linux (10 years), DragonFly BSD & FreeBSD (7 years)
Programming	Python, C, Shell, R, Tcl/Tk
Tools	SSH, Git, Make, Tmux, Vi, Ansible
Data Analysis	R, Pandas; Matplotlib, ggplot2; Keras, Scikit-learn
Web Development	Flask, JavaScript, jQuery, Bootstrap
Languages	**English** — reading & writing (good); listening & speaking (conversant)

Education

September 2019 September 2013	School of Physics and Astronomy, **Shanghai Jiao Tong University** Ph.D. in Physics
June 2013 September 2009	Department of Physics and Astronomy, **Shanghai Jiao Tong University** Bachelor's Degree in Applied Physics

Computer Skills

- DragonFly BSD operating system developer: 200+ code commits; kernel and system utilities; participate in discussions and anwser questions in mailing lists and the IRC channel.
- Use Ansible to manage a VPS running DragonFly BSD that serves personal email, authoritative DNS, website, Git, IRC, etc.
- Built and administrate the workstations, a 4-node computer cluster, and network facilities for the team.
- Participated in building and testing the SKA high-performance cluster prototype (1 login node + 1 data node + 4 computing nodes) in Shanghai Astronomical Observatory.
- Designed and developed the whole website (Django, Bootstrap, jQuery) for "The 1st China–New Zealand Joint SKA Summer School" in 2014.

Personal Projects

- `atoolbox`: (Python, Shell) Various tools collected over the years, to help manage systems, do daily tasks, analyze data, etc.
- `dfly-update`: (Shell) A simple tool to update a DragonFly BSD system.
- `openrcs`: (C) Enhance `OpenBSD RCS`, to make it compatible with `GNU RCS`.
- `fg21sim`: (Python) Simulate the low-frequency radio sky maps.
- `cdae-eor`: (Python, Keras) Use a Convolutional Denoising Autoencoder (CDAE) to separate the faint EoR signal.
- `chandra-acis-analysis`: (Python, Shell, Tcl) Semi-automate utilities for analyzing X-ray astronomical data.
- `resume`: (LaTeX) The template and source files of *this resume*.

Research Achievements

- Developed the low-frequency radio sky image simulation software: `FG21sim`.

- Developed a suite of utilities to semi-automate the X-ray astronomical data analysis: `chandra-acis-analysis`.
- Separated the faint cosmological EoR signal along the frequency dimension using a Convolutional Denoising Autoencoder (CDAE).
- Classified the radio galaxies in the FIRST survey according to morphologies using a Convolutional Neutral Network (CNN).
- Significantly improved the modeling of radio halos, and integrated the instrumental effects of radio interferometers into the simulation pipeline.
- Improved the background modeling in X-ray spectral fitting achieved more accurate and robust fitting results.
- Published 2 first-author and 8 co-authored SCI papers.

Internships

August 2018 – April 2018 | Data Engineer @ Leadvisor Technology Inc. (startup company)

- Search and scrape product and advertising data from Amazon web (Python, Requests, BeautifulSoup).
- Deployed the Airflow server and database to periodically retrieve product sales and advertising data from Amazon.
- Developed the website (Flask, jQuery) to help customers to optimize their advertising campaigns on Amazon.

September 2013 – July 2013 | Web Developer @ 97 Suifang (startup company)

- Developed the back-end (Django) to support user registration, data storage and search.
- Developed the front-end (jQuery, AJAX) to visualize the temporal variations of a patient's examination indicators.