Vlas Sokolov

Astrophysics Ph.D.

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https://vlas-sokolov.github.io

GitHub profile: vlas-sokolov

Stack Overflow: profile link

About me

As a Ph.D. candidate in astrophysics, I am conducting academical research and performing data analysis on large astronomical datasets, using modern Python data analysis tools and a deep understanding of statistical methods. In particular, I am building data reduction pipelines, routinely performing non-linear regression analysis and model selection for imaging and spectroscopic data, and extensively use various visualization tools to communicate the scientific results obtained.

Skills

Advanced (6+ years):
Scientific Python (numpy, scipy, pandas, matplotlib), UNIX-like OS

Intermediate (2+ years):
bash, git, scikit-learn, LaTeX

Familiar (up to 1 year):
C/C++, R, matlab, open MPI

Languages

English (fluent); German, Chinese (intermediate); Ukranian, Russian (native)

Work Experience

2014-current — Max Planck Institute for Extraterrestrial Physics — Research Assistant
Conducting academic research and analysing astronomical observations of the early stages of massive star formation.

2012-2014 — National Tsing Hua University — Research Assistant
- (Python, scipy, pandas)
- Implemented Levenberg-Marquardt algorithm (C)
- Teaching Assistant for PHYS 4330 (2013 Spring and Fall semesters)

Education

Sep 2014 – Jul 2018 (expected) — Ludwig-Maximilians-Universität München — Germany
Ph.D. candidate in Astrophysics

Sep 2012 – Aug 2014 — National Tsing Hua University — Taiwan
M.Sc.; Institute of Astronomy

Sep 2008 – Jul 2012 — National Chiao Tung University — Taiwan
B.Sc.; Dept. of Electrophysics

Sep 2004 – Jun 2008 — Kyiv Natural Science Lyceum — Ukraine

Relevant Online Courses

2018-; ∼3 months	Deep Learning	(Udacity, ongoing)
2018; 10 weeks	Intro to Machine Learning	(Udacity)
2013; 4 weeks	Computing for Data Analysis	(Coursera)

Academic Expertise

- Experience in independent academic research (list of publications)
- Talks at multiple international conferences
- Deep understanding of statistical methods and concepts
- Capacity for independent analysis and self-reliant problem-solving skills
- Keen interest in Bayesian parameter estimation and model comparison

Technical Expertise

- Extensive hands-on experience in processing noisy imaging and spectral data
- An avid open-source contributor (e.g. pyspeckit, matplotlib)
- Grid-search optimization for initial values of a gradient descent-like algorithm (Python; GitHub link)
- Bayesian inference and model selection package for large spectroscopic datasets (Python, nested sampling, Open MPI; GitHub link)
- Webscraper for an automated retrieval of Herschel infrared Galactic Plane Survey data (Python, selenium; GitHub link)
- Co-author on a multivariate clustering method for astrophysical applications (Python, in prep.)
- Co-author on a nonlinear regression package for astrophysical spectral lines (Python, in prep.)
- Active use of git-, Slack-, and jupiter workflows; Linux user for over a decade
- Alphabetical photo sorting by EXIF creation date (Python; on GitHub gist)
- Split flac / cue flags into properly tagged .flac files (Bash; on GitHub gist)