



Vlas Sokolov

Ph.D. candidate

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- [vlas-sokolov.github.io](https://github.com/vlas-sokolov)
- GitHub profile: [vlas-sokolov](https://github.com/vlas-sokolov)
- Stack Overflow: [profile link](#)

About me

I am astrophysics PhD candidate in Munich, looking to apply my skills to challenging real-world datasets. In my daily work, I am conducting academical research 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 regression analyses and model selection for imaging and spectroscopic data, extensively using modern 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

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|--------------|--|---------|
| 2014–current | Max Planck Institute for Extraterrestrial Physics | Germany |
| | Postgraduate Researcher | |
| | <ul style="list-style-type: none">Conducted academic research and analysed astronomical observations of the early stages of massive star formationApplied clean coding practices while routinely building data reduction pipelines for large astronomical imaging and spectral datasetsActively contributed to open-source packages (pyspeckit, astropy, matplotlib) | |
| 2012–2014 | National Tsing Hua University | Taiwan |
| | Research Assistant | |
| | <ul style="list-style-type: none">Evaluated an evolutionary sequence of massive protostars (Python, pandas, astropy)Developed a Levenberg-Marquardt algorithm implementation (C)Teaching Assistant for PHYS 4330 (2013 Spring and Fall semesters) | |

Education

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|-----------------------------------|---|---------|
| Sep 2014 – Jul 2018 (expected) | Ludwig-Maximilians-Universität München Ph.D. candidate in Astrophysics | Germany |
| Sep 2012 – Aug 2014 | National Tsing Hua University M.Sc.; Institute of Astronomy | Taiwan |
| Sep 2008 – Jul 2012 | National Chiao Tung University B.Sc.; Dept. of Electrophysics | Taiwan |
| Sep 2004 – Jun 2008 | Kyiv Natural Science Lyceum | Ukraine |

Self Study

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|----------------|-----------------------------|------------|
| 2018; 10 weeks | Intro to Machine Learning | (Udacity) |
| 2013; 4 weeks | Computing for Data Analysis | (Coursera) |

Portfolio

- 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)
- 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.](#))
- Alphabetical photo sorting by EXIF creation date (Python; [on GitHub gist](#))

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