Curriculum Vitae

Marcel R. Haas

Personal Information

Dr. Marcel Richard Haas
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Birth date/place: March 26, 1983, Oosterhout (NB), the Netherlands
Nationality: Dutch
References on request.

Interests: Data analysis, data visualization, data analytics, data science, physical sciences, statistics, data mining, big data, physical modeling, statistical modeling, simulations, interdisciplinary science, social physics.

Professional Experience

- *Current: DSW Zorgverzekeraar, Schiedam, NL*. I work as a **data analyst at the business intelligence department** of a health insurance provider. We provide the company with a large range of reports and dashboards, serving many departments in the company, as well as ad-hoc data or analysis requests using a selection of **SAS tools**. I had a special role in two long-term projects, one to have more graphic based reports, and one to implement a machine learning based automated framework for fraud detection.
- *2012 - 2013: Rutgers University, New Brunswick (NJ), USA*. Independent Postdoctoral Research Fellow. Modeling of the observational process for a future large radio telescope to create mock observations, **using our own software written mostly in Python**. These will be used to optimize observing strategies. Using very large supercomputer simulation datasets (~ 100TB) we (with an international team of ~ 50 people) **statistically modeled** the largest survey done with the Hubble Space Telescope. My proposal won funding for two undergraduate students to work with me on the analysis of hydrodynamical supercomputer simulations of galaxy formation. I also was tutor of 6 students in a research project for Rutgers' undergraduate course 'Renewable Energy' in the Department of Mechanical Engineering on 'Energy harvesting on handheld devices'.
- *2010 - 2012: Space Telescope Science Institute, Baltimore (MD), USA*. Postdoctoral Research Fellow. We developed the first ever mock Hubble Space Telescope observations from hydrodynamical supercomputer simulations. We **developed software in Python** that also made extensive use of third-party software. I led the team of 6 people (including 2 graduate students) in our efforts to model astrophysical sources, the telescope and instrument and the methods observers would use on real data. As postdoc representative in a committee, we designed and implemented a formal mentoring system for postdocs. I taught several guest lectures in a graduate course in Physics at the Johns Hopkins University ('Numerical Methods in Physics').
- 2006 - 2010: Universiteit Leiden. PhD student at Leiden Observatory. Independent scientific research that led to a PhD thesis, titled 'Nature and Nurture in Galaxy Formation Simulations'. It is based on large and smaller scale numerical models of galaxy evolution. Co-supervision of a MSc student research project.
- 2004 - 2006: NOVA College, Amstelveen. Teacher Physics, HAVO 4 & 5 and tutor of 8 students. (.17 fte)

Education

- *December 2010*: PhD in Astrophysics, Leiden University (advisors: dr. Joop Schaye and prof. dr. Marijn Franx), on a thesis, titled 'Nature and Nurture in Galaxy Formation Simulations'.
- *2006*: Master of Science Astrophysics ('*cum Laude*'), Utrecht University (supervisor: prof. dr. Henny Lamers), thesis: 'Star clusters in their host galaxies'.
- *2004*: Bachelor of Science Physics and Astronomy ('*with honors*'), Utrecht University.
- *2001*: Gymnasium (grammar school, science major), Alberdingk Thijm College, Hilversum.
- *Computer courses*: Advanced Python Mastery (by David Beazley, 2011), Software Carpentry (2012)
- *Online courses*: An introduction to artificial intelligence (sept-dec 2011), Writing in the sciences (sept-dec 2012), Economic principles for scientists (early 2013)
- *Professional development*: Intercultural communication, How to manage your supervisor, Giving scientific and technical presentations.

Extracurricular activities

- *2011 - 2012* Member of panel 'on the State of the Postdoctoral Experience for Scientists and Engineers - Revisited', for the American National Academy of Sciences.
- *2008 - 2009* National Committee for the International Year of Astronomy 2009, in which I coordinated outreach activities for children.
- *2006* Organising committee of the Dutch Astronomers Conference.
- *2004* Organising committee of a summer school for high school teachers of the European Association for Astronomy Education (EAAE).
- I have been active in popularisation of astronomy. Until recently, I wrote a bi-monthly section on astronomical news for a children's magazine. This magazine is published by the Youth Association for Astronomy in the Netherlands (JWG), where I also served on the national board for 10 years (2 years as treasurer, 3 as chair). In 6 of those years I also served on the boards of related organisations ('KNVWS' and 'Stichting De Koepel') as representative for the youth. I co-organized a dozen astronomy related camps in the Netherlands and abroad and gave tens of public talks to a wide variety of audiences. In 2007 I won the Kaiser Prize for astronomy popularization for being part of the organisation of the first Dutch Astronomy Olympiad.

Languages

Mother tongue: Dutch.
Other: English (fluent) and German (fair).

Computer skills

Operating systems: Linux/UNIX, MacOS, Windows
Daily use: Python (including numpy/scipy/matplotlib/scikit-learn and other modules), SAS (including Base, Enterprise Guide, DI Studio, Visual Analytics, Fraud Framework), IDL
Experienced with: SQL, Version control, Shell scripting, HTML/css, Fortran 77/90/95, MS Office
Basic knowledge: C/C++, R, MPI, Mathematica, Hadoop/MapReduce