

Brandon W. Tingley

Curriculum Vitae



Personal Details:

Born 4 April 1973, Richmond, Virginia, U.S.A
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Personal Profile:

I am former research astrophysicist, with skills that include data analysis, data visualization, data science, and general programming. I have specific experience with Java, and some with SQL and Hadoop. I am accustomed to working in groups on large international projects where effective communication is key, with particular skills in written English and mentoring.

Education:

2006 Ph.D. Astronomy, Australian National University (ranked 20th best university in the world)
Dissertation title: *Going from Observations to Confirmed Exoplanets*
2000 M.S. Astronomy, University of Massachusetts-Amherst
1995 B.A. Astronomy-Physics (with Distinction), University of Virginia
Echols Scholar, Dean's list all seven semesters

Professional Appointments:

2016-2017 Data Scientist, DashSoft ApS

Responsibilities:

- Train as a data scientist

Results:

- Wrote a code in Java and Hadoop and SQL to process Wikipedia that made it possible to find the shortest clickable navigation between any two Wikipedia pages, which ultimately required the use of an MySQL database to run on a single computer. This included the implementation of a modified BFS algorithm that could typically find the shortest path in less than ten seconds on a single laptop.
- Became AWS Certified Developer – Associate level, Certificate AWS-ADEV-10276

2012-2016 Post Doc, Institut for Fysik og Astronomi, Aarhus Universitet, Aarhus, Denmark

Responsibilities:

- Mentoring
- Teaching
- Original research
- Public Outreach

Results:

- Developed a new course on Binary Stars
- Guided a severely dyslexic Master's student through his thesis who none of the others in the department would work with. This not only helped the student realize his dreams, but also resulted in the department earning additional funding from the government.

- Developed a new technique for assessing the quality of transiting exoplanet candidates using machine learning on a variety of observed parameters.

2008-2012 Post Doc, Instituto de Astrofísica de Canarias, La Laguna, Tenerife, Spain

Responsibilities:

- Contribute to the CoRoT mission, a joint project between the Europeans and French space agencies, particularly in photometric follow-up

Results:

- Developed a new technique to confirm transit exoplanet candidates and to identify the best transiting exoplanet candidates. This technique has since been incorporated into the design of the European Space Agency's next planetary discover mission Plato.
- Personally rewrote the text of the article announcing the discovering of the first terrestrial exoplanet discovered outside the Solar System so that it became accepted by the scientific community, after the previous attempt been rejected.
- Wrote a popular science article for the magazine Sky & Telescope on this planet, which was featured as the cover article of what became their best selling issue ever off the newsstand up to that point.
- Developed a new technique for assessing the quality of transiting exoplanet candidates found by the CoRoT mission which led to the false positive rate dropping from about 90% to about 25%.

2007-2016 Responsible for Work Package 710-01000, Planetary Transits for ESA's Gaia mission

Responsibilities:

- Develop an algorithm to find transit exoplanet candidates in Gaia photometry efficiently
- Write detection software in Java that could be integrated into the Gaia data processing pipeline

Results:

- Created an algorithm that was over a million times faster than the corresponding off-the-shelf algorithm, which made it possible to search for transiting exoplanets in all one billion stars in the Gaia dataset, orders of magnitude better than the approximately ten thousand stars that could have been processed otherwise. It is currently being used in the Gaia data reduction pipeline.

2006-2008 Post Doc, Institut d'Astronomie et d'Astrophysique, Université Libre de Bruxelles

Responsibilities:

- Contribute to the development of binary stars fitting software and transiting exoplanet detection software for Gaia

Results:

- Developed highly efficient algorithms to assist in the fitting of binary stars
- Developed a highly efficient algorithm to detect transiting exoplanets

2000-2003 Research Assistant, Institut for Fysik og Astronomi, Aarhus University, Denmark

Responsibilities:

- Develop the data analysis pipeline for the MONS satellite

Results:

- Tested all of the different algorithms for detecting transiting exoplanet in data, discovering that a relatively unknown one was in fact the best. Also presented an

alternative derivation of this algorithm from a standard signal processing technique that made it clear why it was the best. This algorithm is now the industry standard.

Certifications:

AWS Certified Developer – Associate level, Certificate AWS-ADEV-10276

Publications:

10 first-author publications in respected Astrophysical journals

60+ additional publications to which I contributed

3 articles in popular Astronomy magazines

References:

Mikkel Damsgaard	CloudPartners Aps	mikkel@cloudpartners.com
Hans Kjeldsen	Aarhus University	hans@phys.au.dk
Hans-Jörg Deeg	Instituto de Astrofísicas de Canarias	hdeeg@iac.es

Personal:

I am an extrovert, sociable and almost always in a good mood. I am divorced with two children, boys 8 and 11. My hobbies include basketball, reading, and playing and writing songs on my guitar.