RICHARD T. BARTELS

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EDUCATION

PhD Physics (cum laude) September 2014 - August 2018
University of Amsterdam *Amsterdam, NL*

- Thesis: "All the Light We Cannot See" (supervisor: Dr. Christoph Weniger)
- Topics: (astro-)particle physics, dark matter, statistics and data analysis.
- Published 9 papers in high-impact peer-reviewed journals.

M. Sc. Physics (cum laude) February 2013 - August 2014
University of Amsterdam *Amsterdam, NL*

Education Abroad Program September 2012 - December 2012
University of California, Berkeley *Berkeley, CA*

B. Sc. Liberal Arts & Sciences (summa cum laude) September 2009 - January 2013
University College Utrecht *Utrecht, NL*

- Major: physics and mathematics
- Minors: history, philosphy

EXPERIENCE

University Medical Center Utrecht August 2020 - Present
Senior Data Scientist *Utrecht, NL*

Vantage AI September 2018 - August 2020
Data Scientist *Nieuwegein, NL*

- Data science consultant at various companies, ranging from start-up scale to large governmental organisations.
- Putting machine learning and deep learning algorithms (computer vision) in production.
- Responsible for organising the weekly Vantage training program, which offers soft- and hard-skill training.

SKILLS

General	Excellent communication and professional writing skills.
Languages	Dutch (native), English (fluent), German and French (elementary)
Computer Languages	Python (expert), C++ (intermediate), Matlab/Octave (intermediate)
Packages & Tooling	TensorFlow, PyTorch, PyMC3, scikit-learn, numpy, cython, pandas, PySpark, SQL, Docker, Git

PERSONAL INTERESTS

My hobbies include a variety of endurance sports such as triathlon (Ironman), ultra-trail running, biking and hiking. In addition, I also enjoy travelling, reading and film.

Appendix - Academic

PUBLICATIONS

In peer-reviewed journals

1. R. Bartels and T. Edwards. Comment on "Understanding the γ-ray emission from the globular cluster 47 Tuc: Evidence for dark matter?". *Phys. Rev.*, D100(6):068301, 2019. doi: 10.1103/PhysRevD.100.068301
2. R. T. Bartels, T. D. P. Edwards, and C. Weniger. Bayesian model comparison and analysis of the Galactic disc population of gamma-ray millisecond pulsars. *Mon. Not. Roy. Astron. Soc.*, 481(3): 3966–3987, 2018d. doi: 10.1093/mnras/sty2529
3. R. Bartels, F. Calore, E. Storm, and C. Weniger. Galactic binaries can explain the Fermi Galactic centre excess and 511 keV emission. *Mon. Not. Roy. Astron. Soc.*, 480(3):3826–3841, 2018a. doi: 10.1093/mnras/sty2135
4. R. Bartels, E. Storm, C. Weniger, and F. Calore. The Fermi-LAT GeV excess as a tracer of stellar mass in the Galactic bulge. *Nat. Astron.*, 2(10):819–828, 2018c. doi: 10.1038/s41550-018-0531-z
5. M. Tavani et al. Science with e-ASTROGAM: A space mission for MeV–GeV gamma-ray astrophysics. *JHEAp*, 19:1–106, 2018. doi: 10.1016/j.jheap.2018.07.001
6. R. Bartels, D. Hooper, T. Linden, S. Mishra-Sharma, N. L. Rodd, B. R. Safdi, and T. R. Slatyer. Comment on "Characterizing the Population of Pulsars in the Galactic Bulge with the Fermi Large Area Telescope" [arXiv:1705.00009v1]. *Phys. Dark Univ.*, 20:88–94, 2018b. doi: 10.1016/j.dark.2018.04.004
7. R. Bartels, D. Gaggero, and C. Weniger. Prospects for indirect dark matter searches with MeV photons. *JCAP*, 1705(05):001, 2017. doi: 10.1088/1475-7516/2017/05/001
8. R. Bartels and S. Ando. Boosting the annihilation boost: Tidal effects on dark matter subhalos and consistent luminosity modeling. *Phys. Rev.*, D92(12):123508, 2015. doi: 10.1103/PhysRevD.92.123508
9. R. Bartels, S. Krishnamurthy, and C. Weniger. Strong support for the millisecond pulsar origin of the Galactic center GeV excess. *Phys. Rev. Lett.*, 116(5):051102, 2016. doi: 10.1103/PhysRevLett.116.051102
10. R. Bartels, F. Zandanel, and S. Ando. Inverse-Compton Emission from Clusters of Galaxies: Predictions for ASTRO-H. *Astron. Astrophys.*, 582:A20, 2015. doi: 10.1051/0004-6361/201525758

Preprints and in progress

1. E. E. Fennis, C. M. van Damme, Y. M. Schlotter, J. D. Sinke, M. H. Leistra, R. T. Bartels, and F. Broere. Efficacy of subcutaneous allergen immunotherapy in atopic dogs: a retrospective study of 664 cases. *Veterinary Dermatology (submitted)*, 2020

TEACHING

Teaching

· Cosmology (masters course), Fall 2017, University of Amsterdam - teaching assistant
· General relativity (masters course), Spring 2017, University of Amsterdam - teaching assistant
· Particles and fields (masters course), Spring 2016, University of Amsterdam - teaching assistant

- Astroparticle physics (masters course), Spring 2015, University of Amsterdam - teaching assistant
- Advanced statistics (masters course), Winter 2015, University of Amsterdam - teaching assistant

Student supervision

- Kathleen Short - M.Sc. Thesis "Millisecond Pulsars and the Galactic Centre GeV Excess: Prospects for e-ASTROGAM", June 2017 - daily supervisor (with C. Weniger)

CONFERENCE CONTRIBUTIONS, SEMINARS & OUTREACH

International Conferences

- Very High Energy Phenomena in the Universe - Quy Nhon, Vietnam (12-18 August 2018) - invited review talk.
- 3 Elephants in the Gamma-Ray Sky - Garmish-Partenkirchen, Germany (21-24 October 2017) - invited talk.
- APS 7 - Amsterdam-Paris-Stockholm workshop - Woerden, the Netherlands (11-13 October 2017) - contributed talk
- TeVPA 2017 - TeV Particle Astrophysics - Columbus (OH), USA (7-11 August 2017) - contributed talk
- TeVPA 2016 - CERN Geneva, Switzerland (12-16 September 2016) - contributed talk
- APS 6 - Gouvieux, France (29-31 August 2016) - contributed talk
- International Astronomical Union (IAU) symposium 322: The Multi-Messenger Astrophysics of the Galactic Centre - Cairns, Australia (18-22 July 2016) - contributed talk
- Anisotropic Universe Workshop (2nd) - Amsterdam, The Netherlands (11-13 April 2016) - contributed talk
- Gamma Rays and Dark Matter - Obergurgl, Austria (7-11 December 2015) - contributed talk
- TeVPA 2015 - Kashiwa, Japan (26-30 October 2015) - contributed talk
- APS 5 - Djurönäset, Sweden (21-23 September 2015) - contributed talk
- ICRC 2015 - International Cosmic Ray Conference - The Hague, The Netherlands (30 July - 6 August 2015) - poster

National Conferencs

- GRAPPA@5 - Amsterdam, the Netherlands (16-18 October 2017) - contributed talk
- APP22 - 22nd Symposium on Astroparticle Physics in the Netherlands - Driebergen, Netherlands (30-31 March 2017) - contributed talk
- NAC 2016 - Netherlands Astronomy Conference - Nunspeet, The Netherlands (23–25 May 2016) - contributed plenary talk
- APP20 - 20th Symposium on Astroparticle Physics in the Netherlands - Berg en Dal, the Netherlands (26-27 March 2015) - contributed talk

Seminars

- "A review of the Fermi-LAT GeV excess in light of its likely stellar origin" - ICC Universitat de Barcelona, Barcelona, Spain (9 February 2018)
- "Understanding the Galactic Center GeV excess" - INFN and University of Torino, Turin, Italy (28 November 2017) - invited

Outreach

- "Wat is donkere materie? De grote onopgeloste puzzel in de moderne (astro)fysica" - Volkssterrenwacht Orion, Bovenkarspel (9 January 2019)
- De Jonge Doctor: Donkere Materie - Dr. Kelder en Co, NPO Radio 1 (6 October 2018)

Appendix - Professional Experience

ONLINE CERTIFICATES

- *AI for Medicine* – deeplearning.ai on Coursera. Certificate earned on December 28, 2020.

  AI for Medical Treatment – deeplearning.ai on Coursera. Certificate earned on December 28, 2020.

  AI for Medical Prognosis – deeplearning.ai on Coursera. Certificate earned on December 28, 2020.

  AI for Medical Diagnosis – deeplearning.ai on Coursera. Certificate earned on October 30, 2020.

- *Building a Data Science Team* – Johns Hopkins University on Coursera. Certificate earned on July 14, 2020.

- *Taming Big Data with Apache Spark and Python - Hands On!* – by Sundog Education on Udemy. Certificate earned on April 15, 2019.

- *Practical Reinforcement Learning* – National Research University Higher School of Economics on Coursera. Certificate earned on February 14, 2019.

- *Deep Learning, a 5-course specialization* – deeplearning.ai on Coursera. Certificate earned on January 7, 2019.

  Neural Networks and Deep Learning – deeplearning.ai on Coursera. Certificate earned on December 11, 2018.

  Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization – deeplearning.ai on Coursera. Certificate earned on December 21, 2018.

  Structuring Machine Learning Projects – deeplearning.ai on Coursera. Certificate earned on December 24, 2018.

  Convolutional Neural Networks – deeplearning.ai on Coursera. Certificate earned on December 30, 2018.

  Sequence Models – deeplearning.ai on Coursera. Certificate earned on January 7, 2019.

- *Google Cloud Platform Big Data and Machine Learning Fundamentals* – by Google Cloud on Coursera. Certificate earned on October 1, 2018.

TALKS

Public talks

· *Next Gen Railway Asset Management* (with Jasper Derikx) - PyData Eindhoven - Eindhoven, the Netherlands (29-30 November 2019)

· *Next Gen Railway Asset Management* (with Oscar van Hees) - Big Data Expo - Jaarbeurs, Utrecht, the Netherlands (18-19 September 2019) - Top 10 best talks

Podcasts

· De Dataloog - Het belang van onzekerheid bij ML modellen (with Lieke Kools).