

Tim B. Bakker

Amsterdam
The Netherlands
✉ t.b.bakker@uva.nl

*Do not go gentle into that good night.
Rage, rage against the dying of the light.
~ Dylan Thomas*

Publications

2020 **Experimental design for MRI by greedy policy search**, *NeurIPS*, Spotlight.

Relevant work experience

2021-2021 **Research internship at FAIR**, *Facebook AI Research*, Montreal (remote).

Research internship on machine learning for active acquisition in Magnetic Resonance Imaging.

2019-current **PhD student at AMLab**, *University of Amsterdam*, Amsterdam.

Active learning is my primary research focus. Other interests include Bayesian methods and reinforcement learning, both in their relation to active learning as well as standalone.

2017-2019 **Machine learning engineer**, *BrainCreators*, Amsterdam.

I worked on active learning, text embeddings, audio and text segmentation (BNR Smart Radio), image style transfer, natural language processing, object detection, and causal inference.

Education

2014–2016 **Master of Science (Theoretical Physics)**, *University of Amsterdam*, 8.4 (*Cum Laude*).

Interdisciplinary courses: Statistical Programming, Advanced Statistics, Critical Thinking, Academic English, Programming in Mathematica, Information Theory, Group Theory.

Projects: Reproducing results on generalisation guarantees in adaptive data analysis and holdout set reuse, master's project on implications of objective Bayesian probability theory for probabilistic theories in physics.

Extracurricular: mentor of international master's group at UvA Introductory week 2015.

2011–2014 **Bachelor of Science (Physics and Astronomy)**, *University of Amsterdam*, 8.6 (*Cum Laude, Cum Honore*).

Interdisciplinary courses: Programming in Python, Algebra (Group Theory), Chaos Theory, Complex Analysis.

Projects: literature study on fundamental constants of nature, programming chaotic orbits in a binary star system, bachelor's project on black hole entanglement entropy.

Extracurricular: supervisor at Science Park Physics Fair 2013, research excursion CERN 2014.

Miscellaneous coursework

Course **Teaching skills for PhD students**, *July 2019 and October 2020*, Amsterdam.

About: university provided course on teaching tutorial sessions in person (2019) and online (2020).

- Traineeship **Young Mavericks data science traineeship**, *April 2017*, Amsterdam.
Topics: classical machine learning basics, visualisation.
- Course **Neural Networks for Machine Learning - University of Toronto**, *December 2016*, Online.
Topics: deep learning basics, energy-based models.
- Course **Machine Learning - Stanford University**, *October 2016*, Online.
Topics: classical machine learning and deep learning basics, some industry applications (spam detection, recommender systems).
- Workshop **Center for Applied Rationality Workshop**, *May 2016*, San Francisco.
About: This workshop aims to give participants more understanding and control of their own decisions and behaviour. The techniques taught are inspired from models of reasoning from probability and decision theory, combined with cognitive science research on how human brains actually work and how we can train ourselves to improve. The goal is to convert those mathematical and empirical insights into everyday skills, such as how to make more accurate predictions, avoid self-deception, and use arithmetic in ways that better motivate you to action.

Organising

- Organiser **Inclusive AI**, *April 2019 - current*, University of Amsterdam.
The Inclusive AI initiative is an inclusive space for students of the Master AI to get non-academic help from senior peers in the field and connect with like-minded people of a similar background. Our goal is to directly combat the infamous leaky pipeline found in academia.
- Organiser **Effective Altruism Amsterdam**, *March 2016 - current*, Amsterdam.
We meet every month to philosophise, discuss current events, and talk about the best ways to have an actual impact in the world.
- Organiser **LessWrong Meetup Netherlands**, *July 2016 - July 2018*, Amsterdam.
We met every few weeks to philosophise, discuss cognitive biases, and learn techniques for dealing with the latter.
- Organiser **Effective Altruism Netherlands**, *May 2016 - July 2017*, Utrecht.
I helped organise and volunteer at national projects with the goal of movement building.

Programming

- Primary Cumulative five years experience in Python doing scientific programming and machine learning. Proficient in PyTorch, some experience with Tensorflow and Keras.

Languages

- Dutch **Native**
- English **Full professional proficiency**