Tim B. Bakker

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

Publications

2022 **Learning objective-specific active learning strategies with Attentive Neural Processes**, *T. Bakker, H. van Hoof, M. Welling*, Preprint.

2022 **E-Valuating Classifier Two-Sample Tests**, *T. Pandeva, T. Bakker, C.A. Naesseth, F. Forré*, Preprint.

2022 **On learning adaptive acquisition policies for undersampled multi-coil MRI reconstruction**, *T. Bakker, M. Muckley, A. Romero-Soriano, M. Drozdzal, L. Pineda*, Medical Imaging with Deep Learning, MIDL 2022.

2021 **Back to Basics: Deep Reinforcement Learning in Traffic Signal Control**, *S. Kanis, L. Samson, D. Bloembergen, T. Bakker*, The 10th International Workshop on Urban Computing, UrbComp 2021.
Best paper-award runner-up

2020 **Experimental design for MRI by greedy policy search**, *T. Bakker, H. van Hoof, M. Welling*, Conference on Neural Information Processing Systems, NeurIPS 2020.
Spotlight presentation

Selected talks

2023 **Existential Risks of AI**, *Dutch Ministry of Defence*, Den Haag.

2023 **Existential Risks of AI**, *Pakhuis de Zwijger*, Amsterdam.

2020 **Active Sensing for MRI**, *Qualcomm AI*, Amsterdam.

Relevant work experience

2023-current **Research internship at Qualcomm AI**, *Qualcomm AI*, Amsterdam.
Research internship on machine learning for active learning in physics simulators.

2019-current **PhD student at AMLab**, *University of Amsterdam*, Amsterdam.
My research primarily focuses on active learning and active sensing for high-tech applications, such as MRI and molecular simulations. Other interests include Bayesian probability theory and reinforcement learning. I have taught for multiple courses on basic machine learning and reinforcement learning. I have supervised Master students on multiple final projects, one of which resulted in a workshop paper.

2021-2021	**Research internship at FAIR**, *Facebook AI Research*, Montreal (remote). Research internship on machine learning for active sensing in Magnetic Resonance Imaging. Resulted in a conference paper at MIDL, 2022.
2017-2019	**Machine learning engineer**, *BrainCreators*, Amsterdam. Various projects on applying classical and deep learning models to client use-cases. I laid the ground work on audio segmentation for the award-winning BNR Smart Radio.

Education

2014–2016	**Master of Science (Theoretical Physics)**, *University of Amsterdam*, *8.4 (Cum Laude)*. **Interdisciplinary courses:** Statistical Programming, Advanced Statistics, Programming in Mathematica, Information Theory, Group Theory. **Master project:** On the Cox-Jaynes justification for objective Bayesian probability theory and the mind projection fallacy in physics.
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. **Bachelor project:** Area Dependence of Scalar Field Entanglement Entropy.

Volunteering and organising

Chair	**Amsterdams Studentenprojectkoor Activities Committee**, *October 2019 - current*, Amsterdam.
Mentor	**Inclusive AI**, *April 2019 - current*, University of Amsterdam.
Co-founder	**Effective Altruism Amsterdam**, *March 2016 - current*, Amsterdam.
Organiser	**Inclusive AI**, *April 2019 - October 2021*, University of Amsterdam.
Board	**Amsterdams Studentenprojectkoor**, *November 2018 - February 2019*, Amsterdam.
Co-founder	**LessWrong Meetup Netherlands**, *July 2016 - July 2018*, Amsterdam.
Organiser	**Effective Altruism Netherlands**, *May 2016 - July 2017*, Utrecht.

Languages

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