

CONTACT	<p>www.ta.co.nl <i>E-mail:</i> taco.cohen@gmail.com</p>
RESEARCH INTERESTS	<p>Geometric deep learning, equivariant neural networks, visual & auditory perception, medical applications of deep learning, theory of deep learning, generative models & data compression, causality.</p>
EDUCATION	<p>Universiteit van Amsterdam</p> <p>PhD in Machine Learning 2013–June 2021</p> <ul style="list-style-type: none"> • <i>Cum laude.</i> • Supervisor: prof. dr. Max Welling. • Thesis “Equivariant Convolutional Networks”. <p>Universiteit van Amsterdam</p> <p>M.Sc. Artificial Intelligence 2011–2013</p> <ul style="list-style-type: none"> • <i>Cum laude</i>, GPA: 9.3 / 10. • Thesis: “Learning Transformation Groups and their Invariants”. Supervisor: prof. dr. Max Welling. Won the university-wide UvA Thesis Prize, 2014. <p>Universiteit Utrecht</p> <p>B.Sc., Computer Science 2007–2010</p> <ul style="list-style-type: none"> • <i>Cum Laude</i>, GPA: 4.0 / 4.0. • Elective courses in AI, Cognitive Neuroscience and Human Perception.
PROFESSIONAL EXPERIENCE	<p>Qualcomm Research Netherlands</p> <p><i>Research Scientist (Senior Staff Eng.)</i> 08/2017 – Now</p> <ul style="list-style-type: none"> • Leading the generative modelling & data compression team. • Co-Supervising PhD students working on geometric deep learning, equivariance & causality. <p>European Lab for Learning and Intelligent Systems</p> <p><i>Co-Director</i> 2020 – Now</p> <ul style="list-style-type: none"> • Co-director of the ELLIS Geometric Deep Learning program. • Connecting the European GDL community at regular workshops. <p>Scyfer (acquired)</p> <p><i>Cofounder</i> 05/2013 – 08/2017</p> <ul style="list-style-type: none"> • Successful machine learning startup specialized in deep active learning. • Developed data-efficient deep learning & active learning technologies. • The company served many high-profile clients in medical, social media, retail, finance, broadcasting, manufacturing, telecommunications, and other industries. • Acquired by Qualcomm in 2017. <p>OpenAI, Inc.</p> <p><i>Research Intern</i> 11/2016 – 03/2017</p>

Google DeepMind

Research Intern

05/2016 – 08/2016

- Semi-supervised learning of equivariant representations, with prof. Geoff Hinton.

Several independent game studios

Freelance programmer

2005–2010

TEACHING EXPERIENCE

Universiteit van Amsterdam

Teaching Assistant

2011 – 2016

- Courses: calculus, statistics, computer vision, datastructures, machine learning I, machine learning II.
- BSc thesis supervision: Carla Groenland.
- MSc thesis or project supervision: Luisa Zintgraf, Jorn Peters, Emiel Hogeboom, Marcel Boersma, Liam Schoneveld, Jonas Koehler, Tim Davidson, Pim de Haan, Mario Geiger, Maurice Weiler, Jim Winkens, Jasper Linmans, Marysia Winkels, Ties van Rozendaal.

PRIZES AND AWARDS

- Graduated *cum laude* for BSc, MSc and PhD.
- MIT 35 innovators under 35 Europe, 2018.
- ICLR 2018 Best Paper Award for “Spherical CNNs”.
- Google PhD Fellowship, 2017.
- Best review award ICLR 2017 and Outstanding Reviewer award ICML 2018.
- First place in the university-wide thesis prize of the University of Amsterdam, for my master’s thesis “Learning Transformation Groups and their Invariants”.
- World champion mobile phone throwing 2007 (Freestyle category).

SELECTED TALKS

2021

- Tutorial on Equivariance @ MINDS TRIPODS Winterschool

2020

- Tutorial on Equivariant Networks @ NeurIPS
- Gauge Theory in Geometric Deep Learning @ DiffGeo4DL workshop (NeurIPS)
- Natural Graph Networks @ This Week in ML & AI (TWIML)
- Equivariant Networks and Natural Graph Networks @ UPenn Workshop on Equivariance and Data Augmentation
- Keynote: Omnidirectional CNNs @ OmniCV Workshop (CVPR)
- Natural Graph networks @ Microsoft Physics meets ML
- Equivariant and Geometric DL @ QC 3D DL Workshop

2019

- Gauge Equivariant CNNs @ UCLA / IPAM Workshop on Deep Geometric Learning of Big Data and Applications
- Gauge Equivariant CNNs @ Berkeley
- Gauge Equivariant CNNs @ ICLR Workshop “Representation Learning on Graphs and Manifolds”
- Gauge Equivariant CNNs @ MSR Workshop on Physics & ML
- Introduction to Equivariant Networks @ ASCI Course on Computer Vision by Learning

- Gauge Equivariant CNNs @ YES X: “Understanding Deep Learning: Generalization, Approximation and Optimization”
- Gauge Equivariant CNNs @ Oxford
- Gauge Equivariant CNNs @ Cambridge
- Gauge Equivariant CNNs @ Imperial College London
- Gauge Equivariant CNNs @ Math+X Symposium on Inverse Problems and Deep Learning in Space Exploration, Rice University

2018

- Power efficient on-device AI @ Re-Work Deep Learning Summit
- Equivariant CNNs: A General Theory @ ECCV Workshop “Geometry Meets Deep Learning”
- General Theory of Equivariant Convolutional Networks @ ICML Workshop “Towards learning with limited labels: Equivariance, Invariance, and Beyond”
- Equivariant Networks @ Data Science Meetup Nijmegen
- Advanced Neural Networks @ iQ Winterschool
- Spherical CNNs @ ICLR

2017

- G-CNNs & Steerable CNNs @ Facebook
- G-CNNs & Steerable CNNs @ Google Brain Mountainview
- G-CNNs & Steerable CNNs @ Qualcomm
- Data efficient deep learning @ Scyfer DL & AI Meetup

2016

- Machine Learning @ Nuon college tour
- G-CNNs @ Saclay-Paris
- G-CNNs @ OpenAI
- G-CNNs @ Berkeley Redwood Center
- G-CNNs @ ICT-Open
- De Empathische Machine with Max Welling @ Paradiso Amsterdam

2015

- Learning irreducible Representations @ Tsinghua University
- Equivariant Representations @ Soatto Lab, UCLA
- Harmonic Exponential Families @ ICML
- G-CNNs @ Google Deepmind
- G-CNNs @ Cambridge ML Lab
- G-CNNs @ Alan Turing Institute

2014

- Learning irreducible Representations @ ICML Tractable models workshop