

Karen Ullrich

PHD STUDENT · PROBABILISTIC MACHINE LEARNING

Room C3.260, Science Park 904, 1098 XH Amsterdam, Netherlands

☎ (+31) 62 42 40 537 | ✉ karn.ullrich@gmail.com | 🏠 www.karenullrich.info | 📷 karenullrich | 🐦 @karen_ullrich

Work Experience

Microsoft Research Lab Cambridge

RESEARCH INTERN IN THE MACHINE INTELLIGENCE AND PERCEPTION GROUP

- Topic: Generative modelling for systems biology.

Cambridge, UK

May 2018 - Aug. 2018

Austrian Research Institute for Artificial Intelligence (OFAI)

RESEARCHER IN THE INTELLIGENT MUSIC PROCESSING GROUP

- Topic: Topological aspects of deep learning in particular with respect to the curse of dimensionality.

Vienna, Austria

Jan. 2014 - Oct. 2015

Uniklinikum Leipzig and Max Planck Institute for Human, Cognitive and Brain Sciences

RESEARCH ASSISTANT

- Topic: Analysis of high-Tesla diffusion MRI data, location and evaluation of clusters.

Leipzig, Germany

Jul. 2013 - Sep. 2013

Biophysics Group, Universität Leipzig

RESEARCH INTERN IN THE SOFT MATTER PHYSICS DIVISION

- Occupation: Development (hardware and software) of a spatial tissue stretcher.

Leipzig, Germany

Mar. 2012 - Sep. 2012

Education

University of Amsterdam

PHD IN MACHINE LEARNING

- Topic: Probabilistic Deep Learning, Information Theory and Geometric Methods
- Supervisor: Prof. Max Welling

Amsterdam, Netherlands

Nov. 2015 - PRESENT

University of Amsterdam

MASTER OF SCIENCE IN COMPUTATIONAL SCIENCE

- Major: Computational Chemistry, Molecular Simulations
- Average Grade: 8.4 (out of 10)

Amsterdam, Netherlands

Sep. 2012 - Aug. 2014

Universität Leipzig

BACHELOR OF SCIENCE IN PHYSICS

- Program focus on theoretical physics
- Thesis at Helmholtz Center for Environmental Research
- Development of a novel carbon dioxide measurement method.

Leipzig, Germany

Oct. 2009 - Jun. 2012

Skills

Programming/scripting languages Python, C (cuda, Open MPI), bash, lua (Torch)

Deep Learning frameworks pyTorch, tensorflow, theano, keras, lasagne

Prototyping Raspberry-Pi, Arduino, Google SketchUp, 3D-printing, sewing, soldering, woodworking

Spoken languages German (native), English (fluent), Dutch (C1), French (A2)

Public Events

Forum InformatikerInnen für Frieden und gesellschaftliche Verantwortung

INVITED TALK IN COLLAB. WITH HENDRIK HEUER

- Title: "Die Grenzen der Automation durch Künstliche Intelligenz: Wie wissen wir, was automatisiert werden kann und was nicht?"
- A talk about the limitations of ML for the general public

Berlin, Germany

Oct. 2018

34c3 (Chaos Communication Congress)

CONTRIBUTED TALK IN COLLAB. WITH HENDRIK HEUER

- Title: "Beeinflussung durch Künstliche Intelligenz"
- A talk about bias in ML for the general public
- more than 30K views on youtube and media.ccc.de

Leipzig, Germany

Dec. 2017

MILA/CIFAR Deep Learning and Reinforcement Learning Summer School

Montreal, Canada

CONTRIBUTED TALK

Jul. 2017

- Title: "What Would Shannon Do? Bayesian Compression for DL"
- A talk about information theoretic inspired model compression

Electromagnetic Field Festival

Guildford, UK

HALF-DAY WORKSHOP ON DEEP LEARNING FOR THE ARTS

Aug. 2016

- Tutorial on using Neural Style Transfer

University of Amsterdam

Amsterdam, Netherlands

SUPERVISED 4 WEEK PROJECT WITH 10 STUDENTS IN COLLABORATION JÖRN-HENRIK JACOBSEN AND THOMAS KIPF

Jun. 2016

- Students attempt Neural Style Transfer for musical data

Chaos Communication Camp

Mildenberg, Germany

CONTRIBUTED TALK

Aug. 2015

- Title: "Goethe on my Mind"
- Project Presentation: Generating broken German poetry with RNNs
- more than 1K views on media.ccc.de

Scientific Publications

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| 2017 | Marco Federici, Karen Ullrich, Max Welling
<i>Improved Bayesian Compression</i>
Bayesian Deep Learning Workshop at NIPS |
| 2017 | Christos Louizos, Karen Ullrich, Max Welling
<i>Bayesian Compression for Deep Learning</i>
Conference on Neural Information Processing Systems (NIPS) |
| 2017 | Karen Ullrich, Edward Meeds, Max Welling
<i>Soft Weight-Sharing for Neural Network Compression</i>
International Conference on Learning Representations (ICLR) |
| 2017 | Eelco van der Wel, Karen Ullrich
<i>Optical Music Recognition with Convolutional Sequence-to-Sequence Models</i>
International Society of Music Information Retrieval (ISMIR) |
| 2017 | Karen Ullrich, Eelco van der Wel
<i>Music transcription with convolutional sequence-to-sequence models</i> |
| 2017 | Christin Horn, Philipp Metzler, Karen Ullrich, Matthias Koschorreck, Bertram Boehrer
<i>Methane storage and ebullition in monimolimnetic waters of polluted mine pit lake Vollert-Sued, Germany</i>
Journal of the Science of the Total Environment |
| 2014 | Karen Ullrich, Jan Schlüter, Thomas Grill
<i>Boundary Detection in Music Structure Analysis using Convolutional Neural Networks.</i>
International Society of Music Information Retrieval (ISMIR) |

References

Prof. Dr. Max Welling

Head of AMLAB and QUVA Lab

Further Associations: CIFAR, Qualcum

✉ welling.max@gmail.com