

# 4TU.AMI



## MATHEMATICS FOR INNOVATION

Registration before 28 October  
<http://registration-ami-conference.nl>

More information:  
[www.4tu.nl/ami/en](http://www.4tu.nl/ami/en)

**TU Delft, Science Centre**

TU Delft, Mijnbouwstraat 120, 2628 RX Delft.

**Program committee:**

Remco Duits  
Arnold Heemink  
Johannes Schmidt-Hieber  
Willem Kruijer

# MATHEMATICS OF DEEP LEARNING

## 5 November 2019

09:00 – 09:25	Registration and coffee
09:25 – 09:30	Opening by Kees Vuik
09:30 – 10:10	Estimation ability of deep learning with connection to sparse estimation in function space Taiji Suzuki – Department of Mathematical Informatics, University of Tokyo
10:10 – 10:50	Learned SVD - Deep Learning Decomposition for Inverse Problems Christoph Brune – Department of Applied Mathematics, University of Twente
10:50 – 11:20	Coffee break
11:20 – 12:00	Physics Inspired Deep Learning Methods Max Welling, Institute of Informatics, University of Amsterdam
12:00 – 12:20	Deep limits of residual neural networks Yves van Gennip, Delft Institute of Applied Mathematics, Delft University of Technology
12:20 – 12:40	Group Equivariant CNNs beyond Roto-Translations: B-Spline CNNs on Lie Groups Erik Bekkers, Department of Mathematics and Computer Science, Eindhoven University of Technology
12:40 – 13:30	Lunch break
13:30 – 14:10	Implicit bias and regularization in machine learning Lorenzo Rosasco, Laboratory for Computational and Statistical Learning, Massachusetts Institute of Technology.
14:10 – 14:50	Diffusion Variational Autoencoders Jim Portegies, Department of Mathematics and Computer Science, Eindhoven University of Technology
14:50 – 15:20	Tea break
15:20 – 16:00	Approximation with sparsely connected deep networks Remi Gribonval, Centre de Recherche INRIA Rennes
16:00 – 16:20	Gauge Equivariant Convolutional Networks Taco Cohen, Institute of Informatics, University of Amsterdam
16:20 – 16:40	PDE-based CNNs with Morphological Convolutions Bart Smets, Department of Mathematics and Computer Science, Eindhoven University of Technology
16:40	Closure + drinks