



DVR 0065528

Workshop on

"Systematic approaches to deep learning methods for audio"

September 11 – 15, 2017

organized by

Monika Dörfler (NUHAG, U Vienna) and Arthur Flexer (OFAI, Vienna)

• Monday, September 11, 2017

09:00 – 09:30 Registration & Opening

09:30 – 10:40 **Jan Schlüter** Deep learning as an engineer: The nuts and bolts and dirty tricks

10:45 – 11:15 Coffee / Tea Break

11:15 – 12:15 **Philipp Grohs** Deep learning as a mathematician: Conjectures, proofs and open questions

12:45 - 14:30 Lunch Break

14:30 – 15:15 **Fabio Anselmi** Invariant and selective and representations with applications to Deep learning

15:20 – 16:15 **Emmanuel Vincent** When mismatched training data outperform matched data

16:15 – 16:45 Wrap-up

17:00 – 19:00 Welcome-Gathering

• Tuesday, September 12, 2017

09:30 – 10:20 **Irene Waldspurger** Inversion of the wavelet transform modulus

10:30 – 11:00 Coffee / Tea Break

11:00 – 11:35 **Joakim Andén** Joint Time-Frequency Scattering Networks

11:45 – 12:20 **Vincent Lostanlen** *The spiral and the snowball: deeper enhancements to time-frequency scattering*

12:45 - 14:30 Lunch Break

14:30 – 15:15 **Wojtek Czaja** Analysis of time-frequency scattering transforms

15:30 – 16:05 **Antoine Deleforge** *Reversed Mixture-of-Experts Networks for High- to Low-Dimensional Mapping*

16:15 – 16:45 Wrap-up

• Wednesday, September 13, 2017

09:30 – 10:15 **Simon Durand** *Automatic downbeat tracking of music audio signals*

10:15 – 10:40 **Stefan Balke** *Literature Review: Deep Neural Networks in MIR*

10:45 – 11:15 Coffee / Tea Break

11:15 – 11:55 **Carmine Emanuele Cella** Machine listening intelligence: deep unsupervised learning for music

12:00 – 12:35 Aggelos Gkiokas Causal Time Series Processing with Convolutional Neural Networks. An application to Real Time Beat Tracking

12:45 - 14:30 Lunch Break

14:30 – 15:15 **Karen Ullrich** *Bayesian Neural Networks: Techniques and Applications*

15:15 – 15:50 **Andre Holzapfel** Bayesian meter tracking on learned signal representations

16:15 – 16:45 Wrap-up

• Thursday, September 14, 2017

09:30 – 10:15 **Guido Montufar** Exponential advantages of deep and distributed representations

10:15 - 10:45 Coffee / Tea Break

10:45 – 11:30 **Grégoire Montavon** *Explaining the Predictions of Deep Neural Networks*

12:00 – 12:35 **Hendrik Vincent Koops** *Learning Shared Chord Representations for Annotator Subjectivity*

12:45 - 14:30 Lunch Break

14:30 – 15:05 Sebastian Stober

Automatic Speech Recognition (on a Budget) - Transfer Learning and Introspection

15:10 – 15:45 Olga Slizovskaia

Correspondence between audio and visual deep models for musical instrument detection in video recordings

15:45 – 16:05 **Mishra Saumitra** Interpretable machine learning for music content analysis

 $16{:}15-16{:}45 \ Wrap-up$

19:00 - 22:00 Workshop Dinner

• Friday, September 15, 2017

09:30 – 10:25 **Sander Dielemann** Deep learning for music recommendation and generation

10:30 – 11:00 *Coffee / Tea Break*

11:00 – 11:40 Matthias Dorfer Learning Correspondences between Audio and Sheet-Music Images

11:50 – 12:25 **Roswitha Bammer** Invariance and Stability of Gabor Scattering for Music Signals

12:45 - 14:15 Lunch Break

14:15 – 15:00 **Vinay Rao** An analysis of end-to-end deep learning architectures for speech recognition and adapting them for production

15:00–15:45 **Oriol Nieto** *Cold-Start Music Recommendation Using Multimodal Deep Architectures*

16:00 - 16:45 Wrap-up and Closing

The opening and the talks an Monday take place at the ESI, Boltzmann Lecture Hall. The further talks take place at the ESI, Schrödinger Lecture Hall!