HITS Colloquium

Speaker: **Professor Dr. Carsten Rother**

Head of Visual Learning Lab Heidelberg

Title: **Introducing the Visual Learning Lab Heidelberg…**
from Machine Learning for Inverse Problems to Learning Data Generation
Presentation in English

Date: **Monday, 18 February 2019, 11:00 a.m.**

Location: Carl-Bosch-Auditorium, Studio Villa Bosch, Schloss-Wolfsbrunnenweg 33, 69118 Heidelberg (Studio entrance between Villa Bosch and HITS)

Parking: Parking garage "Unter der Boschwiese" (free of charge)

Abstract:
In this talk I will introduce the Visual Learning Lab Heidelberg. We conduct basic research in the fields of machine learning and combinatorial optimization with application to image analysis, microscopy, astrophysics, medicine, and other fields in Natural- and Life sciences. In this talk, I will present a collection of our research projects. One of the projects is to solve inverse problems with a new form of so-called invertible neural networks, which allows a bijective mapping between parameter-space and measurement-space. The beauty of this approach is that a full distribution of the parameter-space can be reconstructed without any assumptions about its shape. Another project shows how we can learn to generate synthetic labeled data that can be used as a proxy for real-world annotated data, which is often lacking in practical scenarios. A final project demonstrates how to combine neural networks with classical sampling-based algorithms in order to achieve improved task-specific performance.

Curriculum vitae:
Please see: https://hci.iwr.uni-heidelberg.de/vislearn/people/carsten-rother/

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