DR. MICHAEL HERMAN

PERSONAL INFORMATION

Name:	Michael Herman
Date of birth:	May 05, 1987
Web:	www.herman.eu

RESEARCH INTERESTS

Machine Learning

Artificial Intelligence

Deep Learning

Probabilistic Inference

Learning from Demonstration

Inverse Reinforcement Learning

Reinforcement Learning

Cognitive Robotics

EDUCATION

2013 - 2020: PhD in Computer Science (University of Freiburg / Robert Bosch GmbH)
Thesis: „Simultaneous Estimation of Rewards and Dynamics in Inverse Reinforcement Learning Problems"

2011 - 2013: M.Sc. Electrical Engineering and Information Technology (University of Stuttgart)
Thesis: „Active Learning for Image Retrieval"

2007 - 2011: B.Eng. Mechatronics and Electrical Engineering (University of Applied Sciences Esslingen)
Thesis: „Development of an AUTOSAR-Based FlexRay Test Setup for Determining a Minimum Configuration for the Dual Channel Mode of FlexRay"

INDUSTRIAL EXPERIENCE

2019/06 - present: Project Lead & Research Scientist at Bosch Center for AI (Renningen, Germany)
Learning to make predictions of multi-agent human behavior for automated driving (Imitation Learning, Deep Learning, Probabilistic Graphical Models)

2008/05 - present: Executive partner of Herman & Kegreiß GbR (Böblingen, Germany)
Project management, search engine optimization, software development

2016/10 – 2019/06: Research Scientist at Bosch Center for Artificial Intelligence (Renningen, Germany)
Learning to make predictions in multi-agent environments (Imitation Learning, Deep Learning)

2013/08 – 2016/07: PhD student at Robert Bosch GmbH (Renningen, Germany)
Simultaneous estimation of rewards and dynamics in Inverse Reinforcement Learning problems

2011/03 - 2013/05: Student employee at EVOMOTIV GmbH (Leinfelden-Echterdingen, Germany)
Hardware development of electrical circuit boards, embedded software development, signal processing

2010/08 - 2011/02: Bachelor thesis at Daimler AG (Sindelfingen, Germany)
Computation of FlexRay clock precisions of new physical network configurations, development of an AUTOSAR-based test setup for determining a minimum configuration for the dual channel mode of FlexRay

2009/09 - 2010/02: Internship at Daimler AG (Böblingen, Germany)
Development and implementation of an automatic configuration of vehicle data logger systems

2007/07 - 2007/09: Basic internship at Siemens AG (Weilimdorf, Germany)
Basics of electrical engineering

SKILLS & INTERESTS

Programming:	Python, MATLAB, C#, C++, C, HTML, CSS, JavaScript, PHP, SQL
Other interests:	Guitar, piano, singing, squash, snowboarding, electronics

PUBLICATIONS

Pedestrian Behavior Prediction for Automated Driving: Requirements, Metrics, and Relevant Features
Michael Herman, Jörg Wagner, Vishnu Prabhakaran, Nicolas Möser, Hanna Ziesche, Waleed Ahmed, Lutz Bürkle, Ernst Kloppenburg, Claudius Gläser
Submitted to the IEEE Transactions on Intelligent Transportation Systems (T-ITS), 2021

Human Motion Trajectory Prediction: A Survey
Andrey Rudenko, Luigi Palmieri, Michael Herman, Kris M Kitani, Dariu M Gavrila, Kai O Arras
The International Journal of Robotics Research (IJRR), 2020

Simultaneous estimation of rewards and dynamics in inverse reinforcement learning problems
Michael Herman
PhD Thesis, University of Freiburg, 2020

Wasserstein Adversarial Imitation Learning
Huang Xiao, Michael Herman, Joerg Wagner, Sebastian Ziesche, Jalal Etesami, Thai Hong Linh
arXiv preprint arXiv:1906.08113, 2019

Classifying Road Intersections Using Transfer-Learning on a Deep Neural Network
Ulrich Baumann, Yuan-Yao Huang, Claudius Gläser, Michael Herman, Holger Banzhaf, J. Marius Zöllner
IEEE 21th International Conference on Intelligent Transportation Systems, 2018

Predicting ego-vehicle paths from environmental observations with a deep neural network
Ulrich Baumann, Claudius Gläser, Michael Herman, J. Marius Zöllner
IEEE International Conference on Robotics and Automation, 2018

Functionally Modular and Interpretable Temporal Filtering for Robust Segmentation
Jörg Wagner, Volker Fischer, Michael Herman, Sven Behnke
29th British Machine Vision Conference, 2018

Hierarchical Recurrent Filtering for Fully Convolutional DenseNets
Jörg Wagner, Volker Fischer, Michael Herman, Sven Behnke
26th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning, 2018

Learning Semantic Prediction using Pretrained Deep Feedforward Networks
Jörg Wagner, Volker Fischer, Michael Herman, Sven Behnke
25th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning, 2017

I See What You See: Inferring Sensor and Policy Models of Human Real-World Motor Behavior.
Felix Schmitt, Hans-Joachim Bieg, Michael Herman, Constantin A. Rothkopf
AAAI Conference on Artificial Intelligence, 2017

Learning High-Level Navigation Strategies via Inverse Reinforcement Learning: A Comparative Analysis
Michael Herman, Tobias Gindele, Jörg Wagner, Felix Schmitt, Christophe Quignon, Wolfram Burgard
Australasian Joint Conference on Artificial Intelligence, 2016

Exact Maximum Entropy Inverse Optimal Control for modeling human attention switching and control
Felix Schmitt, Hans-Joachim Bieg, Dietrich Manstetten, Michael Herman, Rainer Stiefelhagen
IEEE International Conference on Systems, Man, and Cybernetics, 2016

Predicting lane keeping behavior of visually distracted drivers using inverse suboptimal control
Felix Schmitt, Hans-Joachim Bieg, Dietrich Manstetten, Michael Herman, Rainer Stiefelhagen
IEEE Intelligent Vehicles Symposium, 2016

Inverse Reinforcement Learning with Simultaneous Estimation of Rewards and Dynamics
Michael Herman, Tobias Gindele, Jörg Wagner, Felix Schmitt, Wolfram Burgard
Proceedings of the 19th International Conference on Artificial Intelligence and Statistics, 2016

Multispectral pedestrian detection using deep fusion convolutional neural networks
Jörg Wagner, Volker Fischer, Michael Herman, Sven Behnke
24th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning, 2016

Simultaneous Estimation of Rewards and Dynamics from Noisy Expert Demonstrations
Michael Herman, Tobias Gindele, Jörg Wagner, Felix Schmitt, Wolfram Burgard
24th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning, 2016

Inverse Reinforcement Learning of Behavioral Models for Online-Adapting Navigation Strategies
Michael Herman, Volker Fischer, Tobias Gindele, Wolfram Burgard
IEEE International Conference on Robotics and Automation, 2015