

# 2018 ACM/IEEE 1st International Workshop on Software Engineering for AI in Autonomous Systems **SEFAIAS 2018**

## Table of Contents

Message from the ICSE 2018 General Chair .....	vii
Welcome from the SEFAIAS 2018 Chairs .....	x
Organizing Committee for SEFAIAS 2018 .....	xi
Program Committee for SEFAIAS 2018 .....	xii
ICSE 2018 Sponsors and Supporters .....	xiv

## AI Applications

A Data-Driven Generative Model for GPS Sensors for Autonomous Driving .....	1
<i>Erik Karlsson (ÅF Technology AB) and Nasser Mohammadiha (Zenuity AB)</i>	
How Machine Perception Relates to Human Perception: Visual Saliency and Distance in a Frame-by-Frame Semantic Segmentation Task for Highly/Fully Automated Driving .....	6
<i>Nico Herbig (German Research Center for Artificial Intelligence), Frederik Wiehr (German Research Center for Artificial Intelligence), Atanas Poibrenski (German Research Center for Artificial Intelligence), Janis Sprenger (German Research Center for Artificial Intelligence), and Christian Müller (German Research Center for Artificial Intelligence)</i>	
Emotion-Awareness for Intelligent Vehicle Assistants: A Research Agenda .....	11
<i>Hans-Jörg Vögel (BMW Group Research), Christian Süß (BMW Group Research), Thomas Hubregtsen (BMW Group Research), Elisabeth André (Universität Augsburg), Björn Schuller (Universität Augsburg), Jérôme Härri (Eurecom), Jörg Conradt (Technische Universität München), Asaf Adi (IBM Haifa Research Lab), Alexander Zadorojniy (IBM Haifa Research Lab), Jacques Terken (Technische Universiteit Eindhoven), Jonas Beskow (KTH Royal Institute of Technology Stockholm), Ann Morrison (University of Southern Queensland), Kynan Eng (iniVation), Florian Eyben (audEERING), Samer Al Moubayed (Furhat Robotics), Susanne Müller (Susanne Müller Coaching and Beratung), Nicholas Cummins (Universität Augsburg), Viviane Ghaderi (BMW Group Research), Ronee Chadowitz (BMW Group Research), Raphaël Troncy (Eurecom), Benoit Huet (Eurecom), Melek Önen (Eurecom), and Adlen Ksentini (Eurecom)</i>	

## AI Engineering Methods

Distributed Deep Reinforcement Learning on the Cloud for Autonomous Driving .....	16
<i>Mitchell Spryn (Microsoft Corporation), Aditya Sharma (Microsoft Corporation), Dhawal Parkar (Microsoft Corporation), and Madhur Shrimal (Microsoft Corporation)</i>	
Toward a Holistic Software Systems Engineering Approach for Dependable Autonomous Systems .....	23
<i>Adina Aniculaesei (TU Clausthal), Jörg Grieser (TU Clausthal), Andreas Rausch (TU Clausthal), Karina Rehfeldt (TU Clausthal), and Tim Warnecke (TU Clausthal)</i>	
Toward a Methodology for Training with Synthetic Data on the Example of Pedestrian Detection in a Frame-by-Frame Semantic Segmentation Task .....	31
<i>Atanas Poibrenski (German Research Center for Artificial Intelligence), Janis Sprenger (German Research Center for Artificial Intelligence), and Christian Müller (German Research Center for Artificial Intelligence)</i>	

## Verification of Self-Driving Cars

Deep Learning for Self-Driving Cars: Chances and Challenges .....	35
<i>Qing Rao (BMW Group) and Jelena Frtunikj (BMW Group)</i>	
Exploiting Learning and Scenario-Based Specification Languages for the Verification and Validation of Highly Automated Driving .....	39
<i>Werner Damm (OFFIS) and Roland Galbas (Robert Bosch GmbH)</i>	
Automotive Safety and Machine Learning: Initial Results from a Study on How to Adapt the ISO 26262 Safety Standard .....	47
<i>Jens Henriksson (Semcon Sweden AB), Markus Borg (RISE SICS AB), and Cristofer Englund (RISE Viktoria AB)</i>	

<b>Author Index .....</b>	<b>51</b>
---------------------------	-----------