CHRISTIAN-NILS ÅKERBERG BODA   RESUME

STATUS

Senior Research Engineer at Autoliv Development. Ph.D. degree in Traffic Safety obtained in December 2019 at Chalmers University of Technology. M.Sc. Automotive Engineering, M.Sc. Industrial and Mechanical Engineering (Dipl. ing. Arts et Métiers PARISTECH).

EXPERIENCE

Senior Research Engineer, Ph.D. — 2021/11 - now
Autoliv, Vårgårda

Continuing my work in research around Driver Behaviour and Traffic Safety with a focus on vulnerable road users.
I led the e-safe FFI pre-study which focused on collecting and analysing users of shared e-scooters in Gothenburg city.
I currently lead a research study on motorcyclist behaviour through an in-house data collection.

Research Engineer, Ph.D. — 2020/02 - 2021/11
Autoliv, Vårgårda

Research and development for Digital Services around Driver Behaviour and Traffic Safety.

Ph.D. Candidate — 2014/04 - 2020/02
Chalmers University of Technology, Gothenburg

My Ph.D. work is part of the Driver Interaction with Vulnerable road users (DIV) project. I am studying driver behaviour in interaction with vulnerable road users (i.e., cyclists and pedestrians). I am focusing on better understanding how drivers control their car in intersection and overtaking scenarios. The knowledge gathered in my project could be used, for instance, to improve safety systems' threat assessment algorithms or decision algorithms. More information can be found on the project website, any open-source software can be found on my GitHub webpage.

Project Assistant — 2013/06 - 2014/03
Chalmers University of Technology, Gothenburg

Project assistant on a project which analysed the data collected during the SHRP2 naturalistic driving study. My work on data post-processing and data analysis was used in a Chalmers report (accessible to this link).

Research Assistant — 2012/09 - 2013/01
Chalmers University of Technology, Gothenburg

I improved a video annotation tool developed earlier to extract crucial variables to study driver behaviour in rear-end crashes. The tool was developed with MATLAB and used the EuroFOT data.

Consultant — 2012/06 - 2012/07
ÅF, Gothenburg

ÅF consultant for Volvo Cars Corporation. Development of a MatLab-based program to annotate videos recorded by cameras equipping the EuroFOT vehicles.

❯ *Traffic safety researcher with a research interest on **driver behaviour modelling** and **vulnerable road user** safety*

CONTACT

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FIELDS

- 🚗 Traffic safety research
- 👤 Human factors analyses
- 👥 Driver behaviour modelling
- 🚲 Vulnerable road users safety
- 🚌 Automotive engineering
- ⚙ Mechanical engineering
- 🏭 Industrial engineering

TECHNOLOGIES

- 🐍 Python   Ⅴ Vue.js   ◈ git
- </> MATLAB   </> C/C++   ✏ LaTeX
- 🤖 ROS1/2   ▯ ESP-IDF   DEV DevOps

TOOLS

- 🔧 VS code   🖌 Inkscape
- 📦 FreeCAD

ACTIVITIES

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OPERATING SYSTEMS

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EDUCATION

Chalmers University of Technology, Gothenburg   2014 - 2019
Ph.D. in Machine and Vehicle Systems with specialization in Traffic Safety

Chalmers University of Technology, Gothenburg   2011 - 2013
M.Sc. Automotive Engineering

Master thesis in the Accident Prevention research group, Chalmers University of Technology, I developed an embedded system that automatically provided speed instruction to a professional driver to control on-road testing with participants. Several Phidgets SBC were used to setup the whole system.

Automotive Engineering Project I took part in a project that developed a proof-of-concept Android application to provide a warning to a cyclist and a driver when their travel paths would lead to a crash.

Arts et Métiers PARISTECH, Aix-en-Provence   2009 - 2011
M.Sc. Industrial and Mechanical Engineering

Ranked 92/1107, awarded with the Silver medal.

Lycée Masséna, Nice   2007 - 2009
Preparatory classes, MPSI-PSI, equivalent to B.Sc. Mathematics

PUBLICATIONS

[1] **2020a** C. Boda, E. Lehtonen, and M. Dozza. "A Computational Driver Model to Predict Driver Control at Unsignalised Intersections". In: *IEEE Access* 8. Conference Name: IEEE Access, pp. 104619–104631. ISSN: 2169-3536. DOI: 10.1109/ACCESS.2020.2999851.

[2] **June 1, 2020** (with Marco Dozza, Leila Jaber, Prateek Thalya, and Nils Lubbe). "How do drivers negotiate intersections with pedestrians? The importance of pedestrian time-to-arrival and visibility". In: *Accident Analysis & Prevention* 141, p. 105524. ISSN: 0001-4575. DOI: 10.1016/j.aap.2020.105524. URL: http://www.sciencedirect.com/science/article/pii/S0001457519315052 (visited on 12/17/2020).

[3] **May 1, 2020** (with Alexander Rasch, Gabriele Panero, and Marco Dozza). "How do drivers overtake pedestrians? Evidence from field test and naturalistic driving data". In: *Accident Analysis & Prevention* 139, p. 105494. ISSN: 0001-4575. DOI: 10.1016/j.aap.2020.105494. URL: http://www.sciencedirect.com/science/article/pii/S0001457519305391 (visited on 12/17/2020).

[4] **July 1, 2020** (with Alexander Rasch, Prateek Thalya, Tobias Aderum, Alessia Knauss, and Marco Dozza). "How do oncoming traffic and cyclist lane position influence cyclist overtaking by drivers?" In: *Accident Analysis & Prevention* 142, p. 105569. ISSN: 0001-4575. DOI: 10.1016/j.aap.2020.105569. URL: http://www.sciencedirect.com/science/article/pii/S0001457519317427 (visited on 12/17/2020).

[5] **Oct. 1, 2020** (with Marco Dozza, Pablo Puente Guillen, Prateek Thalya, Leila Jaber, and Nils Lubbe). "Modelling discomfort: How do drivers feel when cyclists cross their path?" In: *Accident Analysis & Prevention* 146, p. 105550. ISSN: 0001-4575. DOI: 10.1016/j.aap.2020.105550. URL: http://www.sciencedirect.com/science/article/pii/S0001457519302994 (visited on 12/17/2020).

[6] **2019**. "Driver interaction with vulnerable road users: Modelling driver behaviour in crossing scenarios". PhD thesis. Chalmers University of Technology. URL: https://research.chalmers.se/en/publication/514013 (visited on 12/12/2019).

[7] **2018** (with Marco Dozza, Katarina Bohman, Prateek Thalya, Annika Larsson, and Nils Lubbe). "Modelling how drivers respond to a bicyclist crossing their path at an intersection: How do test track and driving simulator compare?" In: *Accident Analysis & Prevention* 111, pp. 238–250. ISSN: 0001-4575. DOI: https://doi.org/10.1016/j.aap.2017.11.032.

[8] **2017a** (with Jonas Bärgman and Marco Dozza). "Counterfactual simulations applied to SHRP2 crashes: The effect of driver behavior models on safety benefit estimations of intelligent safety systems". In: *Accident Analysis & Prevention* 102, pp. 165–180. ISSN: 0001-4575. DOI: https://doi.org/10.1016/j.aap.2017.03.003.

[9] **2017b**. "Driver interaction with vulnerable road users: Understanding and modelling driver behaviour for the design and evaluation of intelligent safety systems". Licentiate Thesis. Chalmers University: Chalmers University. (Visited on 02/22/2018).