

# CHRISTIAN-NILS ÅKERBERG BODA | RESUME

## »» STATUS

Ph.D. degree in Traffic Safety to be completed by December, 18th 2019. M.Sc. Automotive Engineering, M.Sc. Industrial and Mechanical Engineering (Dipl. ing. Arts et Métiers PARISTECH)

## »» EXPERIENCE

### Ph.D. Candidate

2014/04 - now

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 web-page.

### 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.

### Trainee

2011/06 - 2011/08

Sabatier SAS, Vitrolles

Sabatier SAS (owned by Soudronic <http://www.soudronic.com/>) is a company which produces industrial machines for manufacturing metallic packaging. My mission was to develop a new software for helping engineers to design the cams, essential parts in their machines. By submitting the different kinematic parameters and dimensions, the software is able to compute and export a file used afterwards for the manufacturing.



» 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

🔗 MATLAB 🌐 Vue.js 📄 CSS3  
🐍 Python 🔗 C/C++ 📄 JAVA  
📄 JavaScript 🖋️ LaTeX 📄 ROS

## TOOLS

📄 VS code 🖋️ Inkscape  
📄 Blender

## ACTIVITIES



## OPERATING SYSTEMS



**Chalmers University of Technology, Gothenburg**  
**M.Sc. Automotive Engineering**

2011 - 2013

**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**  
**M.Sc. Industrial and Mechanical Engineering**

2009 - 2011

Ranked 92/1107, awarded with the Silver medal.

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

2007 - 2009

» PUBLICATIONS

- [1] **2019a** (with Esko Lehtonen and Marco Dozza). "A computational driver model to predict driver control at unsignalised intersections." Submitted to IEEE Transactions on Intelligent Transportation Systems.
- [2] **2019b**. "Driver interaction with vulnerable road users: Modelling driver behaviour in crossing scenarios". en. PhD thesis. Chalmers University of Technology. URL: <https://research.chalmers.se/en/publication/514013> (visited on 12/12/2019).
- [3] **2019c** (with Marco Dozza, Leila Jaber, Prateek Thalya, and Nils Lubbe). "How do drivers negotiate intersections with pedestrians? Fractional factorial design in an open-source driving simulator". Journal article. An earlier version of this paper was presented at the RSS2017 Road Safety & Simulation International Conference. After major revisions, a new version of the paper was submitted to Accident Analysis & Prevention.
- [4] **2019d** (with Marco Dozza, Pablo Puente Guillen, Prateek Thalya, Leila Jaber, and Nils Lubbe). "Modelling discomfort: How do drivers feel when cyclists cross their path?" Submitted to Accident Analysis & Prevention.
- [5] **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>.
- [6] **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>.
- [7] **2017b**. "Driver interaction with vulnerable road users: Understanding and modelling driver behaviour for the design and evaluation of intelligent safety systems". English. PhD thesis. Chalmers University: Chalmers University. (Visited on 02/22/2018).
- [8] **2017c** (with Marco Dozza, Leila Jaber, Prateek Thalya, and Nils Lubbe). "How do Drivers Negotiate Intersections with Pedestrians? Fractional Factorial Design in an Open-source Driving Simulator". In: The Hague, The Netherlands.
- [9] **2015a** (with Trent Victor, Marco Dozza, Jonas Bärgman, Johan Engström, and Gustav Markkula). *Analysis of Naturalistic Driving Study data: Safer glances, driver inattention, and crash risk*. Tech. rep.
- [10] **2015b** (with Adithya Arikere, Jona Marin Olafsdottir, Marco Dozza, Mats Y. Svensson, and Mathias Lidberg). "On the Potential of Accelerating an Electrified Lead Vehicle to Mitigate Rear-End Collisions". In: pp. 377–384.
- [11] **2013** (with Juan Camilo Muñoz Cantillo). "Field assessment of driver decision making at intersections: A real-time wireless application to manipulate encroachment time". MA thesis. Gothenburg: Chalmers University of Technology.