

DAVID STUTZ

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RESEARCH STATEMENT

My *academic* research addresses robustness against adversarial examples [1, 4, 5] and adversarial or random bit errors in (quantized) weights [2, 3]. Previously, I worked on weakly-supervised 3D reconstruction [6, 7] and superpixel segmentation [8]. In *industry*, I worked on various computer vision problems, including line segment/keypoint tracking and pedestrian detection.

Generally, I am interested in **trustworthy machine learning** and deep learning for **(3D) computer vision**.

WORK EXPERIENCE

DeepMind, Research Scientist Intern

Part of the robust and verified artificial intelligence team.

04/2021 – today, London, UK (remote)

MPI for Informatics, Research Assistant

Robustness of deep neural networks against adversarial examples [1, 4, 5] and random/adversarial bit errors [2, 3] (with IBM Research).

10/2017 – today, Saarbrücken, GER

MPI for Intelligent Systems, Student Research Assistant

Deep learning for weakly-supervised 3D reconstruction [6, 7].

01/2017 – 09/2017, Tübingen, GER

Microsoft, Software Engineering Intern

Feature development for “centralized deployment” of Office add-ins.

07/2016 – 09/2016, Dublin, IRL

Hyundai MOBIS, Research Engineering Intern

Evaluation of deep learning methods for pedestrian detection/tracking.

04/2016 – 06/2016, Frankfurt am Main, GER

Fyusion, Research Scientist

Prototypes for line segment/keypoint tracking and pedestrian detection.

05/2015 – 03/2016, San Francisco, USA (remote)

VCI, RWTH Aachen, Student Research Assistant

Benchmark for state-of-the-art superpixel algorithms [8].

05/2015 – 03/2016, Aachen, GER

MATHCCES, RWTH Aachen, Tutor

10/2013 – 01/2014, 04/2014 – 09/2014, Aachen, GER

RS Computer, Web Developer

01/2009 – 03/2014, 10/2014 – 04/2015, 10/2016 – 12/2016, Sinzig, GER

Fraunhofer FKIE, Web Developer

05/2011 – 07/2011, 03/2012, 08/2012 – 09/2012, Wachtberg, GER

PROJECTS: github.com/davidstutz (5.4k stars, 2.6k forks)

AWARDS & HONORS

CVPR AML-CV Workshop Outstanding Paper 2021

CVPR Outstanding Reviewer 2020, 2021

ICML Top Reviewer 2020

Heidelberg Laureate Forum 2019

Qualcomm Innovation Fellowship 2019

STEM Award IT 2018

Springorum-Denk Münze 2018

Accenture Future Technology Leaders 2015 – 2017

Germany Scholarship 2014 – 2017

RWTH Aachen Dean’s List 2012 – 2017

Hans Hermann-Voss Scholarship 2015

Last updated: August 7, 2021.

EDUCATION

MPI for Informatics & Saarland University

Ph.D. Computer Science

Advisors: Bernt Schiele, Matthias Hein

10/2017 – 12/2021 (expected), Saarbrücken, GER

RWTH Aachen

M.Sc. Computer Science, GPA: 1.0/1.0 2017

“Shape Completion from Bounding Boxes with Shape Priors”

Advisors: Andreas Geiger, Bastian Leibe

B.Sc. Computer Science, GPA: 1.1/1.0 2014

“Superpixel Segmentation using Depth Information”

Advisors: Alexander Hermans, Bastian Leibe

10/2011 – 09/2017, Aachen, GER

Georgia Institute of Technology

Graduate Exchange Student, GPA: 4.0/4.0

Advisor: Irfan Essa

01/2015 – 05/2015, Atlanta, USA

MISCELLANEOUS:

MLSS, DeepLearn summer schools 2018, 2019

Soft skill seminars (Saarland University) 2018 – 2020

Coursera/edX courses (e.g. on business) 2012 – 2020

SELECTED PUBLICATIONS

- [1] [D. Stutz](#), M. Hein, B. Schiele. *Relating Adversarially Robust Generalization to Flat Minima*. ICCV, 2021.
- [2] [D. Stutz](#), N. Chandramoorthy, M. Hein, B. Schiele. *Random and Adversarial Bit Error Robustness: Energy-Efficient and Secure DNN Accelerators*. ArXiv pre-print, 2021.
- [3] [D. Stutz](#), N. Chandramoorthy, M. Hein, B. Schiele. *Bit Error Robustness for Energy-Efficient DNN Accelerators*. MLSys, 2021.
- [4] [D. Stutz](#), M. Hein, B. Schiele. *Confidence-Calibrated Adversarial Training: Generalizing to Unseen Attacks*. ICML, 2020.
- [5] [D. Stutz](#), M. Hein, B. Schiele. *Disentangling Adversarial Robustness and Generalization*. CVPR, 2019.
- [6] [D. Stutz](#), A. Geiger. *Learning 3D Shape Completion under Weak Supervision*. IJCV, 2020.
- [7] [D. Stutz](#), A. Geiger. *Learning 3D Shape Completion from Laser Scan Data with Weak Supervision*. CVPR, 2018.
- [8] [D. Stutz](#), A. Hermans, B. Leibe. *Superpixels: An Evaluation of the State-of-the-Art*. CVIU, 2018.

ACADEMIC ACTIVITIES

REVIEWING: CVPR (2019–2021), ICCV/ECCV (2019–2021), NeurIPS (2020–2021), AAAI (2020–2021), JMLR (2021), ICML (2020), CV-COPS (2019–2020), KDD AdvML (2020), TIP (2018), TPAMI (2018)

SUPERVISION: Sukrut Rao, Jyotsna Singh, Nils Walter, Navdeppal Singh (Saarland University)

VOLUNTEERING: Max Planck PhDNet (2020–today)

RECENT TALKS

TU Dortmund, Robust AI Workshop 2021

IBM Research, University of Tübingen, Bosch

Center for AI, Qian Xuesen Laboratory 2020