MARK BOSS

PERSONAL INFORMATION

Born in Germany, 19 March 1991

email hello@markboss.me

website https://markboss.me

WORK EXPERIENCE

Apr-Jul 2019 **Research Intern, NVIDIA — Westford, MA**

NVIDIA

Research on casual shape and material acquisition, which resulted in the publication: "Two-shot Spatially-varying BRDF and Shape Estimation".

2015–2017 **Android Developer, ZAHLZ — Osnabrück, DE**

zahlz

Development of an Android Application for a mobile payment system.

EDUCATION

2018–Present **University of Tübingen**

PhD. Student

Description: Research on casual shape and reflectance acquisition. The main goal is to create methods capable of decomposing images into shape, reflectance, or even illumination.
Advisors: Prof. Hendrik Lensch

2016-2018 **University of Tübingen**

Master of Science

Description: Computer graphics-related degree resulted in a master thesis on a deep learning-based method that enabled appearance information from a few images with known light positions.
Thesis: CNN-based BRDF parameter estimation
Advisors: Prof. Hendrik Lensch

2012-2016 **Osnabrück University of Applied Sciences**

Bachelor of Science

Description: The degree focused on the media-related side of computer science, such as rendering.

PUBLICATIONS

Dec. 2020 **NeRD: Neural Reflectance Decomposition from Image Collections**

arXiv Preprint

A method that decomposes multiple images into shape, reflectance, and illumination by creating a consistent neural volume. Here, even numerous different illuminations between images can be used, which allows for flexible data sources and capture setups.
Authors: Mark Boss, Raphael Braun, Varun Jampani, Jonathan T. Barron, Ce Liu, Hendrik P. A. Lensch

June 2020 **Two-shot Spatially-varying BRDF and Shape Estimation**

IEEE Conference on Computer Vision and Pattern Recognition

A method capable of decomposing two images, one with flash and one without, into shape, reflectance, and illumination. Here, due to a sequential pipeline, the inference is even possible on mobile devices.
Authors: Mark Boss, Varun Jampani, Kihwan Kim, Hendrik P. A. Lensch, Jan Kautz

Oct. 2019 Single Image BRDF Parameter Estimation with a Conditional Adversarial Network

arXiv Preprint

A method which can decompose a single image of a nearly planar surface into its spatially-varying reflectance.
Authors: Mark Boss, Hendrik P. A. Lensch

Jul. 2018 Deep Dual Loss BRDF Parameter Estimation

Workshop on Material Appearance Modeling

A method which can decompose five images with known light positions into its spatially varying reflectance.
Authors: Mark Boss, Fabian Groh, Sebastian Herholz, Hendrik P. A. Lensch

OTHER INFORMATION

Languages

GERMAN · First language

ENGLISH · Fluent

Teaching Experience

Supervision of multiple Master and Bachelor thesis, practical courses, seminars, and tutorial sessions.

PROJECTS

Infomark

Description: A free, scalable, modern, and open-source solution for programming lectures supporting auto-testing/grading of programming assignments scaling to thousands of students and several courses.
Project: https://infomark.org

BRDF Visualizer

Description: A small online BRDF visualizer for teaching purposes.
Project: https://markboss.me/project/web_brdf_viz/

December 9, 2020