Stefan M. Schulz

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Education

University of Bonn 12/2024 - 12/2027

Ph.D., Computer Science
Dissertation: Differentiable Scene Representation for 4D/6D Capture, Reconstruction and Synthesis

- Member of the Visual Computing Incubator Software team setting up software for our Capture Stage
- Member of the Visual Computing Incubator Technical team building another Capture Stage (5.5m diameter)

University of Bonn 04/2023 - 10/2024

Master of Science, Computer Science | GPA: 1.4

- Semester abroad at Aalto University, Finland 08/2023 - 01/2024

Coursework: Quantum Machine Learning, Numerical Algorithms for Visual Computing and Machine Learning, Computational Methods for Stochastics, Bayesian Data Analysis

University of Bonn 10/2019 - 03/2023

Bachelor of Science, Computer Science | GPA: 1.3 (excellent)

Coursework: Data-centric Computer Science, Foundations of Artificial Intelligence, Introduction to Data Science, Computational Intelligence, Linear Algebra, Calculus, Introduction to Probability and Statistics

Friedrich-Ebert-Gymnasium, Bonn 09/2011 - 05/2019

Abitur | GPA: 1.4
International Baccalaureate | Points: 35

- Semester abroad at Nanaimo District Secondary School, Vancouver Island, Canada 09/2016 - 02/2017

Professional Development

deeplearning.ai, Coursera 07/2020 - 10/2020
MOOC - Deep Learning Specialization

deeplearning.ai, Coursera 07/2020 - 10/2020
MOOC - Natural Language Processing Specialization

University of Washington, Coursera 07/2020 - 10/2020
MOOC - Machine Learning Specialization

Hasso-Plattner-Institut, openHPI 03/2020 - 05/2020
MOOC - Practical Introduction to Deep Learning for Computer Vision

Skills

Programming: Python, Java, C++, HTML, CSS

Tools: git, PyTorch, Python scientific libraries, LaTeX, MS Office

Languages: German (mother tongue), English (C1), Spanish (B2), French (B1)

Experience

University of Bonn 08/2021 - today

Teaching Assistant for "Introduction to Computer Graphics and Visualization " 04/2025 - today

- Supervising 1 exercise groups (18 students) meeting weekly
- Grading assignments and preparing exercise solutions

Teaching Assistant for "Technical Informatics" 12/2024 - 04/2025

- Helped organizing exams and conducted exam reviews

Tutor for "Computational Intelligence" 04/2024 - today

- Supervised 2 exercise groups (7 & 11 students) meeting weekly
- Graded assignments and preparing exercise solutions

Research Assistant with focus on VR/AR/Computer Vision 03/2024 - today

- Worked on a program for interactive reconstruction of primitive-based plant structure

Research Assistant with focus on Medical Computer Vision 05/2023 - 11/2023

- Worked on image segmentation techniques for automated drusen instance-aware segmentation in OCT-Scans
- Analyzed characteristics of drusen and checking if these can be categorized into different types

Research Assistant with focus on Computer Vision 02/2023 - 10/2023
- Worked on different image inpainting techniques in 3D to reconstruct temperature data from satellites
- Was responsible for doing literature review, proposal of a suitable method and major implementations

Tutor for "Intelligent Vision Systems" 10/2022 - 04/2023
- Supervised 2 exercise groups (9 & 6 students) meeting weekly
- Graded assignments and explained assignment solutions to the students
- Helped correcting all exams

Research Assistant with focus on Robotics/Computer Vision 04/2022 - 10/2022
- Helped building another version of our robots for the university robotics team called „NimbRo"
- Won the AdultSize Humanoid League as well as the Technical Challenges, and the Best-Humanoid Award at RoboCup 2022

Tutor for "Computational Intelligence" 04/2022 - 10/2022
- Supervised 2 exercise groups (8 & 11) meeting weekly
- Graded assignments and explained solutions to the students
- Prepared exam solutions and helped grading exams

Tutor for "Data-centric Computer Science" & "Foundations of Robotics" 09/2021 - 04/2022
For "Data-centric Computer Science":
- Helped preparing 17 lecture slides and 6 exercise sheets
- Supervised 4 exercise groups (24 & 24 & 12 & 9 students) meeting bi-weekly
- Graded assignments and explained assignment solutions to the students
- Helped correcting all exams

For "Foundations of Robotics":
- Supervised 2 exercise groups (16 & 20 students) meeting weekly
- Provided material for and explained assignment solutions to the students

Research Assistant with focus on Robotics/Computer Vision 08/2021 - 10/2021
- Worked on Image-to-Image translation methods for Pose Estimation of Humanoid Robots

SERgroup Holding International GmbH, Bonn 08/2017 - 08/2017
Intern for Project Development & Project Handling

SERgroup Holding International GmbH, Bonn 08/2016 - 08/2016
Intern for Project Development

Awards

- Deutschlandstipendium 10/2020 - 10/2021
- Deutschlandstipendium 10/2021 - 10/2022
- Deutschlandstipendium 10/2022 - 10/2023
- Deutschlandstipendium 10/2023 - 10/2024

Publications

- N. Wandel, **S. Schulz**, R. Klein. Metamizer: a Versatile Neural Optimizer for Fast and Accurate Physics Simulations. *ICLR* 2025
- F. Huber*, **S. Schulz***, V. Steinhage. Deep Interpolation of Remote Sensing Land Surface Temperature Data with Partial Convolutions. *Sensors* 2024, *24*, 1604
- D. Pavlichenko, G. ficht, A. Amini, m. Hosseini, R. Memmesheimer, A. Villar-Corrales, **S. M. Schulz**, M. Missura, M. Bennewitz, and S. Behnke. RoboCup 2022 AdultSize Winner NimbRo: Upgraded Perception, Capture Steps Gait and Phase-based In-walk Kicks. In *RoboCup 2022: Robot World Cup XXV*, pages 240–252. Springer, 2023

Volunteering

- Member of local youth care 05/2018 - 07/2021
  - Organization and carryout of multiple summer camps