István Sárándi

PhD Candidate in Computer Vision and Machine Learning
sarandi@vision.rwth-aachen.de • IstvanSarandi.com

EDUCATION

- **Ph.D. Computer Science** RWTH Aachen University, Germany (Apr 2017–early 2023)

  Advisor: Prof. Dr. Bastian Leibe
  Thesis: *Robust and Efficient Methods in Visual 3D Human Pose Estimation*

- **M.Sc. Computer Science** RWTH Aachen University, Germany (Oct 2012–Mar 2016)

  Specialized in computer vision, machine learning, image processing
  Thesis: *Pedestrian Line Counting using Probabilistic Combination of Flow and Appearance Information*
  Overall grade: Excellent with distinction (1.3)

- **B.Sc. Computer Engineering** Budapest Univ. of Tech. and Econ., Hungary (Sep 2008–Jan 2012)

  German-language program, exchange semester at the Karlsruhe Institute of Technology (KIT)
  Specialization track: Autonomous Intelligent Systems
  Thesis: *Design of a System to Support Medical Coding* (diagnosis classification via neural nets and SVM)
  Overall grade: Excellent with highest honors

WORK EXPERIENCE

- **Research Assistant** RWTH Aachen University, Germany (Apr 2017–present)
  - **Academic research** and publishing on the topic of 3D human analysis
  - **Applied research** in EU-level and national research projects (CROWDBOT, PARIS)
  - **Supervision** of master thesis projects and student assistants
  - **Teaching** experience (exercise sessions, programming assignments and exam design)
    - Deep Learning Laboratory (Summer 2021)
    - Computer Vision (Summer 2019, Summer 2020)
    - Seminar Computer Vision and Machine Learning (S18, S19, W19, S20, W20, W21)
    - Introduction to Computer Science (Winter 2017)
  - **Systems administration** of the research group's GPU cluster and server infrastructure
- **Student Research Assistant** RWTH Aachen University, Germany (Nov 2013–Oct 2014)

  Pedestrian crowd density estimation and movement analysis in images and video (C++, MATLAB)
- **Student Research Assistant** University Hospital RWTH Aachen, Germany (Dec 2012–Oct 2013)

  Medical computer vision and image processing: eye segmentation and allergic redness measurement, color calibration for wound imaging (Java)
- **Software Engineering Intern** Karlsruhe Institute of Technology (KIT) (July 2011)

  Medical imaging: 3D blood vessel visualization in volumetric CT scans (C++, C++/CLI)

HONORS AND AWARDS

• **Outstanding Reviewer Award**	CVPR	June 2022
• **Outstanding Reviewer Award**	CVPR	June 2021
• **Best 3D Pose Estimation Method**	ECCV 3D Poses in the Wild Challenge	Aug 2020
• **Best 3D Pose Estimation Method**	ECCV PoseTrack Challenge	Sep 2018
• **PhD Funding Scholarship**	Bosch Research Foundation	2017–2020
• **Springorum Commemorative Coin**	proRWTH Foundation	Sep 2016
• **Scholarship for Exchange Semester**	DAAD	Oct 2010–Feb 2011
• **Scholarship for Internship**	DAAD	July 2011

SOFTWARE SKILLS

- **Programming languages:** proficient in Python, extensive experience with C++, MATLAB, Java
- **Frameworks:** extensive knowledge of TensorFlow, NumPy and OpenCV, experience with PyTorch
- Proficient in Linux-based development and systems administration, including Slurm

LANGUAGE SKILLS

- **English**: Proficient (C2 level, IELTS 8.5/9, 2012)
- **German**: Proficient (C2 level, Goethe-Institut ZOP, 2011)
- **Hungarian**: Native speaker

ACADEMIC ACTIVITIES

- **Peer-reviewed** for CVPR, ICCV, ECCV, BMVC, ICRA, GCPR, T-PAMI, T-NNLS, IEEE MultiMedia, The Visual Computer
- International Computer Vision Summer School (ICVSS): 2014 (as M.Sc. student), 2018 (as Ph.D. student)

PUBLICATIONS

- I. Sárándi, A. Hermans, B. Leibe (2023). *Learning 3D Human Pose Estimation from Dozens of Datasets using a Geometry-Aware Autoencoder to Bridge Between Skeleton Formats.* In Winter Conf. on Applications of Computer Vision (WACV)
- I. Sárándi, T. Linder, K. O. Arras, B. Leibe (2021). *MeTRAbs: Metric-Scale Truncation-Robust Heatmaps for Absolute 3D Human Pose Estimation.* In IEEE Trans. Biometrics, Behavior, and Identity Science (T-BIOM)
- M. Knoche, I. Sárándi, B. Leibe (2020). *Reposing Humans by Warping 3D Features.* In Computer Vision and Pattern Recognition Conf. - Workshop Towards Human-Centric Image/Video Synthesis (CVPRW)
- I. Sárándi, T. Linder, K. O. Arras, B. Leibe (2020). *Metric-Scale Truncation-Robust Heatmaps for 3D Human Pose Estimation.* In IEEE Int. Conf. on Automatic Face and Gesture Recognition (FG), Oral
- K. Pfeiffer, A. Hermans, I. Sárándi, M. Weber, B. Leibe (2019). *Visual Person Understanding through Multi-Task and Multi-Dataset Learning.* In German Conf. on Pattern Recognition (GCPR)
- I. Sárándi, T. Linder, K. O. Arras, B. Leibe (2018). *Synthetic Occlusion Augmentation with Volumetric Heatmaps for the 2018 ECCV PoseTrack Challenge on 3D Human Pose Estimation.* arXiv:1809.04987
- I. Sárándi, T. Linder, K. O. Arras, B. Leibe (2018). *How Robust is 3D Human Pose Estimation to Occlusion?* In Int. Conf. on Intelligent Robots and Systems Workshop on Robotic Co-Workers 4.0. (IROSW)
- I. Sárándi, D. P. Claßen, A. Astvatsatourov, O. Pfaar, L. Klimek, R. Mösges. T. M. Deserno (2014). *Quantitative Conjunctival Provocation Test for Controlled Clinical Trials.* In Methods of Information in Medicine, 53(4), 238-244

- T. M. Deserno, I. Sárándi, A. Jose, D. Haak, S. Jonas, P. Specht, V. Brandenburg (2014). *Towards Quantitative Assessment of Calciphylaxis.* In SPIE Medical Imaging: Computer-Aided Diagnosis (Vol. 9035, p. 90353C)
- S. R. Bista, I. Sárándi, S. Dogan, A. Astvatsatourov, R. Mösges, T. M. Deserno (2013). *Automatic Conjunctival Provocation Test Combining Hough Circle Transform and Self-Calibrated Color Measurements.* In SPIE Medical Imaging: Computer-Aided Diagnosis (Vol. 8670, p. 86702J)
- I. Sárándi, T. M. Deserno, D. Classen, O. Pfaar, A. Astvatsatourov, R. Mösges (2013). *Quantitative Conjunctival Provocation Test* (Meeting Abstract) In Proc. Annual Conference of the German Association for Medical Informatics, Biometry and Epidemiology (GMDS)

SUPERVISED STUDENT THESES

- Stefan Erlbeck (2022). *Temporal Modeling of 3D Human Poses in Multi-Person Interaction Scenarios* (Master thesis, RWTH Aachen University)
- Yinglun Liu (2021). *Monocular 3D Human Pose Estimation using Depth as Privileged Information* (Master thesis, RWTH Aachen University)
- Markus Knoche (2020). *Volumetric Feature Transformation for Pose-Conditioned Human Image Synthesis* (Master thesis, RWTH Aachen University)
- Kilian Pfeiffer (2019). *Multi-aspect Embedding Learning for Person Re-Identification* (Master thesis, RWTH Aachen University) (co-advised, regarding the human pose-related components)