István Sárándi, M.Sc.

PhD Candidate in Computer Vision and Machine Learning

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EDUCATION

- **Ph.D. Computer Science** RWTH Aachen University, Germany (Apr 2017–late 2022)

  Advised by Prof. Dr. Bastian Leibe at the Visual Computing Institute
  Thesis: *Robust and Efficient Methods in Visual 3D Human Pose Estimation*

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

  Final grade: Excellent with distinction
  Specializing in computer vision, machine learning, image processing
  Thesis: *Pedestrian Line Counting using Probabilistic Combination of Flow and Appearance Information*

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

  Final grade: Excellent with highest honors
  German-language program with a semester at the Karlsruhe Institute of Technology, Germany (WS2010)
  Specialization: Autonomous Intelligent Systems
  Thesis: *Design of a System to Support Medical Coding* (diagnosis classification via SVMs and neural nets)

WORK EXPERIENCE

- **Research and Teaching Assistant** RWTH Aachen University, Germany (Apr 2017–present)
  - **Academic research** and publishing on the topic of 3D human analysis
  - **Applied research** within EU-level and national research projects (CROWDBOT, PARIS)
  - **Supervision** of master theses and student assistants
  - **Teaching** experience (exams, tutorials, assignments)
    - Computer Vision (Summer 2019, Summer 2020)
    - Seminar Computer Vision and Machine Learning (S18, S19, W19, S20, W20, W21), supervising 3–4 students per semester
    - Deep Learning Laboratory (Summer 2021)
    - Introduction to Computer Science for non-CS Students (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

TECH SKILLS

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

LANGUAGES

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

COMMUNITY PARTICIPATION

- **Peer-reviewed** for CVPR, ICCV, ECCV, ICRA, BMVC, IEEE MultiMedia, IEEE Trans. Neural Networks and Learning Systems, The Visual Computer
- International Computer Vision Summer School (ICVSS): 2014 (as M.Sc. student), 2018 (as Ph.D. student)

PUBLICATIONS

- **Sárándi, I.**; Linder, T.; Arras, K. O.; Leibe, B. (2021). *MeTRAbs: Metric-Scale Truncation-Robust Heatmaps for Absolute 3D Human Pose Estimation.* In IEEE Transactions on Biometrics, Behavior, and Identity Science (T-BIOM), Special Issue (Selected Best Works From Automated Face and Gesture Recognition)
- Knoche, M.; **Sárándi, I.**; Leibe, B. (2020). *Reposing Humans by Warping 3D Features.* In CVPR Workshop Towards Human-Centric Image/Video Synthesis
- **Sárándi, I.**; Linder, T.; Arras, K. O.; Leibe, B. (2020). *Metric-Scale Truncation-Robust Heatmaps for 3D Human Pose Estimation.* In IEEE Int Conf Automatic Face and Gesture Recognition (FG), Oral
- Pfeiffer, K.; Hermans, A.; **Sárándi, I.**; Weber, M.; Leibe, B. (2019). *Visual Person Understanding through Multi-Task and Multi-Dataset Learning.* In German Conference on Pattern Recognition (GCPR)
- **Sárándi, I.**; Linder, T.; Arras, K. O.; Leibe, B. (2018). *Synthetic Occlusion Augmentation with Volumetric Heatmaps for the 2018 ECCV PoseTrack Challenge on 3D Human Pose Estimation.* arXiv:1809.04987
- **Sárándi, I.**; Linder, T.; Arras, K. O.; Leibe, B. (2018). *How Robust is 3D Human Pose Estimation to Occlusion?* In IROS Workshop on Robotic Co-Workers 4.0. arXiv:1808.09316
- **Sárándi, I.**; Claßen, D. P.; Astvatsatourov, A.; Pfaar, O.; Klimek, L.; Mösges, R.; Deserno, T. M. (2014). *Quantitative Conjunctival Provocation Test for Controlled Clinical Trials.* In Methods of Information in Medicine, 53(4), 238-244

- Deserno, T. M.; **Sárándi, I.**; Jose, A.; Haak, D.; Jonas, S.; Specht, P.; Brandenburg, V. (2014). *Towards Quantitative Assessment of Calciphylaxis.* In SPIE Medical Imaging 2014: Computer-Aided Diagnosis (Vol. 9035, p. 90353C)
- Bista, S. R.; **Sárándi, I.**; Dogan, S.; Astvatsatourov, A.; Mösges, R.; Deserno, T. M. (2013). *Automatic Conjunctival Provocation Test Combining Hough Circle Transform and Self-Calibrated Color Measurements.* In SPIE Medical Imaging 2013: Computer-Aided Diagnosis (Vol. 8670, p. 86702J)
- **Sárándi, I.**; Deserno, T. M.; Classen, D.; Pfaar, O.; Astvatsatourov, A.; Mösges, R. (2013). *Quantitative Conjunctival Provocation Test* (Meeting Abstract) In Proc. 58th Annual Meeting of the German Association for Medical Informatics, Biometry and Epidemiology (GMDS)

SUPERVISED THESES

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