Simon Haller-Seeber

Scientific Systems Engineer

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Areas of Interest

- Free Software
- System Automation
- (Educational) Robotics and everything related to the topic
  (see https://stair-lab.uibk.ac.at, https://robocupjunior.at and https://compicamp.li)

Positions

- Systems Engineer at the Department of Computer Science, Intelligent and Interactive Systems, University of Innsbruck (since 2010)
- Lecturer at the Research Area Scientific Computing (part time, since WS22/23)
- Lecturer at the Faculty of Teacher Education, Department of Science Education (part time, 2018-2019)
- Systems Developer and Administrator for Large Scale Linux Systems at the Central IT Services, University of Innsbruck (part time, 2005-2010)
- Internship at the HyperStudio at the Massachusetts Institute of Technology, Cambridge (02/2006)
- Systems Administrator, User Support Department, Central IT Services, University of Innsbruck (part time, 2002-2005)

Education

- 10/2024 Master Degree in Computer Science (granted by the University of Innsbruck)
- 06/2014 Apprentice Instructor
- 02/2012 Engineer Degree (Ing., granted by the Federal Ministry of Economics)
- 10/2006 Bachelor Degree in Computer Science (granted by the University of Innsbruck)
- 06/2000 Technical High School for Telecommunication ('HTL für Nachrichtentechnik')

Talks and Workshops

- A most recent list of talks and workshops can be found here.

Publications

See also Google Scholar

[Link] [Abstract] [BibTeX]

1. Simon Haller-Seeber, Samuel Frontull, TransLoco: AI-Driven Real-Time Transcription, Translation, and Summarization. A self-hosted free-software conference solution. Streifzüge an den Nahtstellen von Medien, Bildung und Philosophie, pp. 397–418, 2026.

[Link] [PDF] [Abstract] [BibTeX]

2. Simon Haller-Seeber, Christopher Kelter, Marko Zarić, Justus Piater, A Free and Open Web-Based IDE for the Sphero Bolt . Robotics in Education, pp. 474–483, 2025. Springer Lecture Notes in Networks and Systems 1544.

3. Fabian Bouvier, Lena Gleirscher, Simon Haller-Seeber, Theo Hug, Madeleine Kaiserer, Miriam Sonntag, Innovative Lehr- und Lernansätze in Lernlaboren: Einblicke in den Media, Inclusion & AI Space des INNALP Education Hub. Medienimpulse 63, 2025.

[Link] [PDF] [Abstract] [BibTeX]

4. Simon Haller-Seeber, Innovative approaches to developing educational robots. MSc Thesis, 09/2024.

[Link] [Online] [PDF] [BibTex]

5. Thomas Auer, Simon Haller-Seeber, Thomas Gatterer, Towards the design of an interactive continuing training for software engineers in the Internet of Things sustainability using the example of autonomous vehicles. IEEE Global Engineering Education Conference, 2023.

6. Thomas Auer, Simon Haller-Seeber, Thomas Gatterer, User Experience design of further training on Test automation of an AI self-driving robotic car powered by a Raspberry Pi. IEEE Global Engineering Education Conference, 2023.

 [Link] [PDF] [Abstract] [BibTeX]

7. Antonio Rodríguez-Sánchez, Simon Haller-Seeber, David Peer, Chris Engelhardt, Jakob Mittelberger, Matteo Saveriano, Affordance detection with Dynamic-Tree Capsule Networks. IEEE-RAS 21st International Conference on Humanoid Robots, 2022.

8. Simon Haller-Seeber, Thomas Gatterer, Patrick Hofmann, Christopher Kelter, Thomas Auer, Michael Felderer, Software Testing, AI and Robotics (STAIR) Learning Lab. Robotics in Education, pp. 182–189, 2022. Springer LNNS 515.

9. Martin Sereinig, Matteo Saveriano, Johannes Gerstmayr, Michael Pieber, Justus Piater, Simon Haller-Seeber, Peter Manzl, Metiyan Ata, Burkhard Moser, Rene Neurauter, Lukas Possenig, David Freina, Michael Dejanovic, Patrick Hofmann. Team Description Paper - Team TYROLICS RoboCup@Work 2021 Tech Report May 2021. [PDF] [BibTex]
10. Simon Haller-Seeber, Erwan Renaudo, Philipp Zech, Florian Westreicher, Markus Walzthöni, Cornelia Vidovic, Justus Piater, ROSSINI: RobOt kidS deSIgn thiNkIng. Robotics in Education, pp. 16–25, 2021. Springer AISC 1316.

11. Patrick Lamprecht, Simon Haller-Seeber, Justus Piater, A Block–based IDE Extension for the ESP32. Robotics in Education, pp. 304–310, 2021. Springer AISC 1316.

12. Erenus Yildiz, Tobias Brinker, Erwan Renaudo, Jakob Hollenstein, Simon Haller-Seeber, Justus Piater, Florian Wörgötter, A Visual Intelligence Scheme for Hard Drive Disassembly in Automated Recycling Routines. International Conference on Robotics, Computer Vision and Intelligent Systems, pp. 17–27, 2020. ROBOVIS 2020 Best Paper Award.

[Link] [PDF] [Abstract] [BibTeX]

13. Philipp Zech, Erwan Renaudo, Simon Haller, Xiang Zhang, Justus Piater, Action representations in robotics: A taxonomy and systematic classification. International Journal of Robotics Research 38 (5), pp. 518–562, 2019.

[Link] [PDF] [Abstract] [BibTeX]

14. Simon Haller, Über "Bildung 4.0", "Schule 4.0" und andere Dinge, die keine Versionierung brauchen. Medienimpulse, Volume: 26 (1), 2018. [Link] [PDF] [Online] [BibTex]
15. Thiusius Savarimuthu, Anders Buch, Christian Schlette, Nils Wantia, Jürgen Rossmann, David Martínez, Guillem Alenyà, Carme Torras, Aleš Ude, Bojan Nemec, Aljaž Kramberger, Florentin Wörgötter, Eren Aksoy, Jeremie Papon, Simon Haller, Justus Piater, Norbert Krüger, Teaching a Robot the Semantics of Assembly Tasks . IEEE Transactions on Systems, Man, and Cybernetics: Systems 48 (5), pp. 670–692, 2018.

 [Link] [PDF] [Abstract] [BibTeX]

16. Stefan Spiss, Yeongmi Kim, Simon Haller, Matthias Harders, Comparison of Tactile Signals for Collision Avoidance on Unmanned Aerial Vehicles. Haptic Interaction (Proceedings of the 2nd Asia Haptics Conference, 2016), pp. 393–399, 2018. Springer LNEE 432.

17. Philipp Zech, Simon Haller, Safoura Rezapour Lakani, Barry Ridge, Emre Ugur, Justus Piater, Computational models of affordance in robotics: a taxonomy and systematic classification. Adaptive Behavior 25 (5), pp. 235–271, 2017.

[Link] [PDF] [Abstract] [BibTeX]

18. Thiusius R. Savarimuthu, Anders G. Buch, Yang Yang, Simon Haller, Jeremie Papon, David Martínez, Eren Aksoy, Manipulation Monitoring and Robot Intervention in Complex Manipulation Sequences. Workshop on Robotic Monitoring, 2014 (Workshop at RSS). Extended Abstract. [Link] [PDF] [BibTeX]
19. David Martínez, Guillem Alenyà, Pablo Jiménez, Carme Torras, Jürgen Roßmann, Nils Wantia, Eren Aksoy, Simon Haller, Justus Piater, Active Learning of Manipulation Sequences. International Conference on Robotics and Automation, pp. 5671–5678, 2014.

Apprentice

- Bryan Fasching (04/2020 - 03/2024)
- Adnan Ali (05/2018 - 05/2019)
- Tizian Müller (09/2014 - 02/2018)

(Co-)Supervised Theses

- Lukas Oberbichler, Thesis: Read & Speak: A Browser-Based Learning Aid for Speaking Practice using Offline Speech Recognition, ongoing.

- Lukas Widmoser, Thesis: Extending OpenRoberta (working title), ongoing.
- Mirko Adam, Thesis: URDF Generation Tool for LEGO Robots: Integrating the Robotic Operating System (ROS/ROS2) into Classroom Robotics Education, ???.
- Tobias Steiner, Thesis: Informatik-Olympiade (working title), ongoing.
- Maximilian Hammen, Thesis: Scalable and Affordable Assistive Robotics for Object Manipulation in Daily Tasks: Supporting Individuals with Physical Disabilities (01/2026).
- Clemens Ehrlich, Paul van Staalduinen, Thesis: Autonomous Formula Student Racecar (06/2025).
- Michael Unterholzner, Thesis: Implementation of a Parcel Management System, 2024/06.
- David Gwiggner, Aufbau von Grundvorstellungen zu Computational Thinking durch Robotereinsatz, 2022/06.
- Nico Vergeiner, Thesis: Development of simulation scenarios for testing self-driving cars, 2022/01.
- Fabian Wechselberger, Thesis: Management tool for electrical appliances using IoT devices, 2021/06.
- Sebastian Bergner, Fabian Kranewitter, IT-Kolleg Thesis: Vision Pipeline for ROS, 2020/06.
- Patrick Lamprecht, Thesis: Entwicklung eines Block Programming Interfaces für den Microcontroller ESP32 zum Einsatz im modernen Informatikunterricht, 2019/11.
- Jacob Jordan, Thomas Leitner, HTL-Dipl. Thesis: Schwarmintelligenz für autonomes Fahren, 2019/05.
- Lee Chhong Shing, Thesis: Haptic Exploration of Images for the Visually Impaired, 2017/06/20.
- Adrian Marxer, Thesis: Visual SLAM for Terrain Reconstruction and Autonomous Flight, 2016/04/19.
- Stefan Spiss, Thesis: Intuitive Human-Computer Interface for Quadcopter Control, 2016/04/19.
- Alexander Falch, Thesis: Entwicklung eines web-basierten Verwaltungstools zur Protokollierung und Zugangssteuerung von Industriegeräten, 2015/12/15.
- Alexander Hirsch, Thesis: Improved On-Board Communication for Low-Cost Mobile Robots, 2014/10/14.
- Martin Kolb, Thesis: Face-Tracking mit Scratch, 2013/06/25.

Teaching Assistance

- Applied High Performance Computing (HPC) [AG 198711, summer term since 2024]
- Software Management for Scientific Computing [VU 198702, winter term since 2022]
- ~~Enabling Music II [VU 703709 | summer term: 2020]~~postponed
- Connective Playthings [VU/PR 800770/1 | summer term: 2019]
- Fachpraktikum [PR 627824 | winter term: 2018/19]
- Informatik Praktikum Robotik [PR 703051 | summer term: 2018]
- Enabling Music [SE 800709 | winter term: 2017/18]
- Bridge-Course [VO 703000 | winter term: 2012-2019]
- Introduction to Autonomous and Intelligent Systems [PS 703031 | summer term: 2013-2017]

Projects

- INNALP Education Hub (FFG, 10/2021-09/2025): STAIR-Lab

- IMAGINE (EU Horizon, 2018-2021)
- Squirrel (EU FP7-ICT-STREP, 2016-2018)
- PaCMan (EU FP7-ICT-STREP, 2014-2016)
- Networking Lake Observatories in Europe (COST Action ES1201, 2013-2016)
- IntellAct (EU FP7-ICT-STREP, 2011–2014)

Initiatives, Events, Misc

- Reviewer: IEEE Transactions on Learning Technologies (2023,2024), RiE (Programme Committee since 2023), ARW (2023), HFR (2020), ICRA (Workshop, 2019)
- RoboCup Junior 2016/2019/2026
- Science Slam: Explainable AI: A sneak peek into the Black-Box, (11/2020)
- Erasmus+ Teaching Staff Exchange, Holon Institute of Technology, Holon, Israel (05/2019).
- Frau Hitt and the 19 Questions: AR Implementation of "Who will be granted a second chance?" (with Stefan Spiss, code, 02/2019).
- RobOt kidS deSign thiNkIng (rossini workshops, since 2018)
- HIT Hackathon 2018 (Press, Video)
- Computer Camp Malbun (since 2003)
- Co-Organizing Free Software Events (IFIT 2003, IFI10 2011, RMS Talk 2017, Panel Discussion 2017)
- Robot Support for König Laurins Rosengarten 2017
- Co-Organizing 1st Stupid Hackathon Tirol 2015
- Capture the Flag (CTF @ IFI 10) 2011
- Support for a state licensed IT–Center in Koudougou (AITED, 2009–2010)

Boards and Organisations

- Chairman of the registered association “brainity” (since 2006)
- Chairman of the registered association “Natur Mensch Technik” (since 2003)
- Member of the academic senate at the University of Innsbruck (2004-2009)
- Member of the science student representative body (2004-2007).
- Member of the student's counsel for Informatics Students (2003-2008).