Mohamed Behery

Doctoral Researcher

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Contact Info.
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in Mohamed Behery
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OpenSource
RobotWebTools

OS Preference
GNU/Linux ★★★★★
Windows ★★★★☆

Languages
Arabic ★★★★★
English ★★★★★
German ★★★☆☆

Research Interests of Focus
Robotics
Artificial Intelligence
Knowledge Representation and Reasoning

Hobbies
Scuba Diving
(PADI Advanced OW)
Freediving
(SSI Level II)
Road Cycling

Education

2018 present	**Ph.D.** Computer Science Artificial Intelligence and Applied Robotics	RWTH Aachen University
2016	**M.Sc.** Software Systems Egineering *Grade: 1.7, Thesis grade: 1.1*	RWTH Aachen University
2011	**B.Sc.** Computer Science and Engineering Received a five year scholarship *Grade: 1.5, Thesis grade: 1.0*	German University in Cairo

Experience

06.2018 present	**Doctoral Researcher**	RWTH Aachen University, Aachen, Germany

- **Workstream Deputy Lead** in the excellence cluster: the Internet of Production (IoP) since 01.2022
- **Coordinator of AI expert group** in the IoP since 01.2022
- **Researcher** at the Knowledge-Based Systems Group (KBSG)
- Teaching courses, seminars, and labs in addition to thesis supervision
- Member of the Confederation of Laboratories for Artificial Intelligence Research in Europe's Rising Researcher Netwok (CLAIRE R2N)

03.2017 05.2018	**Robot Software Engineer**	Magazino GmbH, Munich, Germany

Working as a part of the development team using Python, django, ROS, Vue.js as well as several other tools and frameworks to build tools for robot management.

07.2015 09.2016	**M.Sc. Thesis Student**	German Aerospace Center, Weßling, Germany

Shared autonomy teleoperation of assistive robotic arms for people with tetraplegia using Python, and OpenRave

05.2014 05.2015	**Student Software Developer**	Ericsson Eurolab, Herzogenrath, Germany

Worked on internal tools for network monitoring using Perl and CakePHP

02.2013 07.2013	**Teaching Assistant**	German University in Cairo, Cairo, Egypt

Introduction to computer programming
Data structures and algorithms

03.2010 08.2010	**B.Sc. Thesis Student & Intern**	DHBW Mannheim, Mannheim, Germany

- A testbed for Public Key Infrastructure (PKI)
- Prototyping and UI design for testbed application using Java (Swing) and different UI prototyping tools

Grants and Awards

06.2023	**TAILOR Connectivity Fund** Funding to organise a symposium at the ESSAI summer school	
07.2022	**Voss Foundation Speed Funds** Funding to support a masters thesis	
09.2022	**IoP Young Researcher Award 2022** Second place for work on the next generation HRC for the IoP	

Publications

Book Chapters

Mohamed Behery, Philipp Brauner, Hans Aoyang Zhou, Merih Seran Uysal, et al. "Actionable Artificial Intelligence for the Future of Production". English. In: *Internet of Production Fundamentals, Applications and Proceedings*. Springer, 2023

Conferences and Symposia

Mohamed Behery, Philipp Brauner, Aline Kluge-Wilkes, Ralph Baier, et al. "Digital Shadows for Robotic Assembly in the World Wide Lab". In: *Proceedings of the 56TH CIRP International Conference on Manufacturing Systems (CMS)*. in press. 2023

Mohamed Behery, Jonas Deutsch, Minh Trinh, David Kötter, et al. "Human Robot Collaborative Assembly Using Behavior Trees and Dynamic Tree Dispatching". In: *Proceedings of the 55th International Symposium on Robotics(ISR)*. in press. 2023

Mohamed Behery, Minh Trinh, Christian Brecher, and Gerhard Lakemeyer. "Self-Optimizing Agents Using Mixed Initiative Behavior Trees". In: *Proceedings of the 18th international Symposium on Software Engineering and Self Managing Systems (SEAMS)*. in press. 2023

Hannah Dammers*, **Mohamed Behery***, Gerhard Lakemeyer, Thomas Gries, et al. "Supervised Learning for Robotic Draping Tasks in Composite Preforming". In: *Proceedings of the International Conference on Composite Materials (ICCM)* (2023). in press

Mohamed Behery and Gerhard Lakemeyer. "Digital Shadows of Safety for Human Robot Collaboration in the World-Wide Lab". In: *AAAI Spring Symposium on "HRI in Academia and Industry: Bridging the Gap"*. 2023. URL: https://arxiv.org/pdf/2304.02126

Minh Trinh, Hannah Dammers, **Mohamed Behery**, Ralph Baier, et al. "Safety of Human-Robot Collaboration within the Internet of Production". In: *Proceedings of HCII 2023* (2023). in press

Minh Trinh, David Kotter, Ariane Chu, **Mohamed Behery**, et al. "Safe and Flexible Planning of Collaborative Assembly Processes Using Behavior Trees and Computer Vision". In: *Intelligent Human Systems Integration (IHSI): Vol. 69, 2023* (2023)

Minh Trinh, **Mohamed Behery**, Mahmoud Emara, Gerhard Lakemeyer, et al. "Dynamics Modeling of Industrial Robots Using Transformer Networks". In: *2022 Sixth IEEE International Conference on Robotic Computing (IRC)*. IEEE. 2022, pp. 164–171

Ralph Baier, Hannah Dammers, Alexander Mertens, **Mohamed Behery**, et al. "A Framework for the Classification of Human-Robot Interactions within the Internet of Production". en. In: vol. 2. Lecture Notes in Computer Science. Cham: Springer, 2022

Mohamed Behery, Matteo Tschesche, Fridtjof Rudolph, Gerhard Hirt, et al. "Action Discretization for Robot Arm Teleoperation in Open-Die Forging". In: *Proceedings of the SMC 2020 conference*. 2020

Aymen Gannouni, Vladimir Samsonov, **Mohamed Behery**, Tobias Meisen, et al. "Neural Combinatorial Optimization for Production Scheduling with Sequence-Dependent Setup Waste". In: *proceedings of the SMC 2020 conference*. 2020

Workshops

Mohamed Behery, Minh Trinh, Christian Brecher, and Gerhard Lakemeyer. "Assistive Robot Teleoperation Using Behavior Trees". In: *Proceedings of Variable Autonomy for human-robot Teaming (VAT) workshop @ ACM/IEEE HRI 2023*. 2023. URL: https://arxiv.org/abs/2303.05177

Mohamed Behery and Gerhard Lakemeyer. "Motion Descriptors for Intention Recognition in Robot Tele-operation Tasks". In: *Workshop on Prediction and Anticipation Reasoning in Human Robot Interaction at the International Conference on Robotics and Automation (ICRA)*. Philadelphia, 2022

Mohamed Behery, Minh Trinh, and Gerhard Lakemeyer. "Human Action Nodes for Behavior Trees". In: *Proceedings of the Workshop Robotics for People (R4P): Perspectives on Interaction, Learning and Safety at The Robotics: Science and Systems (RSS) Conference*. 2021, pp. 13–14

Magazine Articles

Mohamed Behery, Philipp Brauner, Martina Ziefle, and Gerhard Lakemeyer. "Behaviour Trees for Representing Human Robot Collaboration Processes in the World Wide Lab". English. In: *ERCIM News* 132 (Jan. 2023), pp. 15–16. URL: https://ercim-news.ercim.eu/images/stories/EN132/EN132-web.pdf

Minh Trinh, **Mohamed Behery**, Oliver Petrovic, Christian Brecher, et al. "Kollaborative Montageprozesse mit Behavior Trees/Collaborative Assembly Processes using Behavior Trees". In: *WerkstattsTechnik* (2022)

Vladimir Samsonov, **Mohamed Behery**, and Gerhard Lakemeyer. "Reinforcement Learning for Short-Term Production Scheduling with Sequence-Dependent Setup Waste". English. In: *ERCIM News* 122 (July 2020), pp. 38–39. URL: https://ercim-news.ercim.eu/

Theses

Mohamed Behery. "A Knowledge-Based Activity Representation for Shared Autonomy Teleoperation of Robotic Arms". Master thesis. RWTH Aachen, Aug. 2016. URL: https://elib.dlr.de/105891/