

# Dr. Dominik Kowald

*Research Area Manager at Know-Center & TU Graz*



*"If scientific reasoning were limited to the logical processes of arithmetic, we should not get very far in our understanding of the physical world. One might as well attempt to grasp the game of poker entirely by the use of the mathematics of probability." (Vannevar Bush, Author of "As We May Think")*

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## Education

**Dr.techn. (Ph.D.),** *Graz University of Technology, Graz, Austria, with distinction.* **2012–2017**

Institute of Interactive Systems and Data Science (ISDS)

**Dipl.Ing. (MSc.),** *Graz University of Technology, Graz, Austria, with distinction.* **2009–2012**

Institute for Information Systems and Computer Media (IICM)

**BSc.,** *Graz University of Technology, Graz, Austria.* **2006–2009**

Institute for Information Systems and Computer Media (IICM)

**College,** *College of Industrial Engineering (BULME), Graz, Austria, with distinction.* **2001–2006**

Manufacturing Computer Science

## Habilitation

**title:** *Transparency, Privacy, and Fairness in Recommender Systems*

**scientific topic:** Applied Computer Science (TU Graz)

**submitted:** November 2023

## Ph.D. thesis

**title:** *Modeling Activation Processes in Human Memory to Improve Tag Recommendations*

**supervisors:** Prof. Stefanie Lindstaedt (TU Graz), Assoc. Prof. Elisabeth Lex (TU Graz), Prof. Tobias Ley (Tallinn University)

## Master thesis

**title:** *Combining Computer-Supported, Collaborative Learning with E-Assessment: Enhancing a Wiki System with Flexible Assessment Methods*

## Bachelor thesis

**title:** *Peer Assessment in Computer Science and Modern Technologies to Build a Flexible E-Learning System around it*

## Academic Positions

|                                                                                                                                  |                  |
|----------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Research Area Manager</b> , <i>Know-Center &amp; TU Graz</i> .                                                                | <b>2021–now</b>  |
| Research Area Manager for FAIR-AI.                                                                                               |                  |
| ○ Research visit at Explainable AI (XAI) group at Maastricht University, The Netherlands, led by Prof. Nava Tintarev (Nov. 2021) |                  |
| <b>Deputy Research Area Manager</b> , <i>Know-Center</i> , Graz.                                                                 | <b>2017–2020</b> |
| Deputy Research Area Manager for Social Computing.                                                                               |                  |
| <b>Researcher</b> , <i>Know-Center</i> , Graz.                                                                                   | <b>2012–2017</b> |
| Researcher (FFG COMET and EU projects), Social Computing.                                                                        |                  |
| <b>Ph.D. candidate</b> , <i>Graz University of Technology</i> , Graz.                                                            | <b>2012–2017</b> |
| Institute of Interactive Systems and Data Science (ISDS).                                                                        |                  |
| <b>Project assistant</b> , <i>Graz University of Technology</i> , Graz.                                                          | <b>2010–2012</b> |
| Institute for Information Systems and Computer Media (IICM).                                                                     |                  |
| <b>Software Developer</b> , <i>IVM Technical Consultants</i> , Graz.                                                             | <b>2009–2010</b> |
| Software developer (Microsoft .NET) in the automotive sector.                                                                    |                  |
| <b>Student assistant</b> , <i>Graz University of Technology</i> , Graz.                                                          | <b>2008–2009</b> |
| Institute of Theoretical Computer Science (IGI).                                                                                 |                  |

## International Research Projects

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|----------------------------------------------------------------------------------------------|
| <b>Data-driven Immersive Analytics (FFG COMET module)</b> : key researcher (2022 - 2026)     |
| <b>TIER-2 (Horizon Europe)</b> : key researcher (2023 - 2025)                                |
| <b>Radreisen4All (FFG Femtech)</b> : key researcher (2022 - 2024)                            |
| <b>Data-driven Artificial Intelligence (FFG COMET module)</b> : key researcher (2020 - 2023) |
| <b>KI in der Pflege (FFG Basisantrag)</b> : key researcher (2021 - 2023)                     |
| <b>TRIPLE (H2020)</b> : key researcher (2019 - 2023)                                         |
| <b>TRUSTS (H2020)</b> : task lead and key researcher (2020 - 2022)                           |
| <b>COGSTEPS (Erasmus+)</b> : key researcher (2020 - 2022)                                    |
| <b>MarineXChange (FFG Basisantrag)</b> : researcher (2020 - 2021)                            |
| <b>JOLIOO (FFG Basisantrag)</b> : researcher (2020 - 2021)                                   |
| <b>AI4EU (H2020)</b> : co-task lead and key researcher (2019 - 2021)                         |
| <b>Heli-D (SFG Gesundheitsfond)</b> : work package lead and researcher (2018 - 2021)         |
| <b>Studo (FFG Basisantrag)</b> : researcher (2018 - 2020)                                    |
| <b>Data Market Austria (FFG flagship project)</b> : researcher (2017 - 2019)                 |
| <b>AFEL (H2020)</b> : co-task lead (2017 - 2018) and researcher (2016 - 2018)                |
| <b>MoreGrasp (H2020)</b> : researcher (2016 - 2018)                                          |
| <b>Learning Layers (FP7)</b> : co-work package lead (2012 - 2016)                            |
| <b>Organic.Lingua (FP7)</b> : developer (2012 - 2013)                                        |
| <b>ALICE (FP7)</b> : developer (2010 - 2012)                                                 |

## Awards

**Mind-the-Gap Gender and Diversity Award:** TU Graz. 2022.

**Dissertation Award:** Chamber of Labor Styria (Arbeiterkammer Steiermark), Austria. 2018.

**Nominated for ACM SIGCHI Outstanding Dissertation Award:** Faculty for Computer Science of TU Graz for Ph.D. thesis. 2018.

**Nominated for Award of Excellence:** Faculty for Computer Science of TU Graz for Ph.D. thesis. 2018.

**Nominated for Heinz Zemanek Award:** Faculty for Computer Science of TU Graz for Ph.D. thesis. 2018.

**Best Demo Honourable Mention:** Conference on Knowledge Technologies and Data-Driven Business (i-Know'2015) in Graz, Austria. 2015.

**Best Poster Award:** ACM Conference on Hypertext and Social Media (HT'2014) in Santiago, Chile. 2014.

## Grants

**FFG – K1 Research Center Grant:** 20,4M for the Know-Center (3,4M for FAIR-AI) as research area manager for FAIR-AI. 2023 - 2026.

**FFG – COMET Module Grant “Data-Driven Immersive Analytics”:** 3,7M for the Know-Center GmbH (350k for FAIR-AI) as key-researcher. 2022 - 2026.

**Project Grant:** Radreisen4All, FFG Femtech, 150k for FAIR-AI, Know-Center GmbH as key-researcher. 2022 - 2024.

**Intern Grant:** Internship for female students, FFG Femtech, 8,5k for FAIR-AI for 6 month internship as co-supervisor. 2022 - 2023.

**Project Grant:** COGSTEPS, Erasmus+, 130k for Social Computing, Know-Center GmbH and ISDS@TU-Graz as key researcher. 2020 - 2023.

**Project Grant:** TRUSTS, H2020, 730k for the Know-Center GmbH (138k for Social Computing) as task lead. 2020 - 2022.

**FFG – COMET Module Grant “DDAI”:** 3,7M for the Know-Center GmbH (700k for Social Computing) as key researcher. 2020 - 2022.

**Project Grant:** TRIPLE, H2020, 377k for the Know-Center GmbH (120k for Social Computing) as co-task lead. 2019 - 2022.

**FFG – K1 Research Center Grant:** 20,4M for the Know-Center (3,4M for Social Computing) as deputy research area head. 2019 - 2022.

**Project Grant:** AI4EU, H2020, 147k for the Know-Center GmbH (73,5k for Social Computing) as co-task lead. 2019 - 2021.

**Travel Grant:** Research stay (1 week) at XAI group at Maastricht University, The Netherlands, by Land Steiermark. 2021.

**Project Grant:** Health-Literacy und Diversity (HeLi-D), Gesundheitsfonds Steiermark, 75k for the Know-Center (37.5k for Social Computing) as WP lead. 2018 - 2020.

**Travel Grant:** Research stay (1 week) at WIS Group at TU Delft, The Netherlands, by Land Steiermark (postponed due to COVID-19). 2020.

**Project Grant:** JOLIOO, FFG Basisantrag, 120k for Social Computing, Know-Center GmbH as researcher. 2020.

**Travel Grant:** European Symp. on Computational Social Science (EU-ROCSS) in Zürich, Switzerland. 2019.

**Travel Grant:** European Symp. on Computational Social Science (EU-ROCSS) in Cologne, Canada. 2018.

**Project Grant:** OpenAIRE Matchmaker, OpenAIRE Open Tender Calls, 15k for Social Computing, Know-Center GmbH as researcher. 2018.

**Travel Grant:** ACM Conference on Hypertext and Social Media (HT'2016) in Halifax, Canada. 2016.

**Project Grant:** Data Market Austria (DMA), IKT der Zukunft, 286k for the Know-Center (170k for Social Computing) as researcher. 2015 - 2019.

## Session Chairing, Workshops, and Seminars

**Dagstuhl'2024:** Participant of the "Evaluation Perspectives of Recommender Systems" Dagstuhl seminar, 2024.

**DIH-Sued'2022:** Co-Organizer of DIH-Sued workshop on recommender systems, 2022.

**SummerAcademy'2020:** Co-Organizer of Know-Center summer academy on recommender systems, Graz, Austria (online due to COVID-19), 2020.

**CIKM'2018:** Session chair of the Recommendation track of the ACM CIKM conference, Turin, Italy, 2018.

**RSBDA'2017:** Co-Organizer of the Second Workshop on Recommender Systems and Big Data Analytics of i-KNOW 2017, Graz, Austria, 2017.

**RSBDA'2016:** Co-Organizer of the First Workshop on Recommender Systems and Big Data Analytics of i-KNOW 2016, Graz, Austria, 2016.

**i-Know'2015:** Session chair of the Social Computing track of the i-KNOW conference, Graz, Austria, 2015.

**i-Know'2013:** Session chair of the Science 2.0 track of the i-KNOW conference, Austria, 2013.

## Program Committee Membership, and Reviewing

**ECIR:** IR for Good track of the European Conference on Information Retrieval, 2024.

**FRONTIERS (special issue editor):** Reviews in RecSys, 2023.

**ECIR (senior PC):** Reproducibility track of the European Conference on Information Retrieval, 2023.

**INTRS:** Joint Workshop on Interfaces and Human Decision Making for Recommender Systems co-located with RecSys, 2023.

**IJHCI:** International Journal of Human-Computer Interaction, 2022.

**HAAPIE:** International Workshop on Human Aspects in Adaptive and Personalized Interactive Environments co-located with UMAP, 2022.

**ICWE:** International Conference on Web Engineering, 2022.

**FRONTIERS (review editor):** Frontiers in Big Data - Section Recommender Systems, since 2021.

**MORS:** Workshop on Multi-Objective Recommender Systems co-located with RecSys, since 2021.

**PERSPECTIVES:** Perspectives on the Evaluation of Recommender Systems co-located with RecSys, since 2021.

**TIST:** ACM Transactions on Intelligent Systems and Technology, 2021.

**CIKM:** ACM International Conference on Information and Knowledge Management, since 2020.

**WWW:** International World Wide Web Conference, since 2020.

**IUI:** ACM Conf. on Intelligent User Interfaces, since 2020.

**FRONTIERS:** Frontiers in Psychology, 2020.

**RDSM:** International Workshop on Rumours and Deception in Social Media co-located with COLING conference, 2020.

**HT:** ACM Conference on Hypertext and Social Media, since 2019.

**ASC:** Applied Soft Computing, since 2019.

**EPJ:** EPJ Data Science, 2019.

**TWEB:** ACM Transactions on the Web, 2019.

**EUROCSS:** EU Symp. on Computational Social Science, 2019.

**TCSC:** IEEE Transactions on Computational Social Systems, 2019.

**RecSys:** ACM Conference on Recommender Systems, since 2018.

**PlosOne:** PlosOne Journal, 2018.

**Journal of Systems and Software:** Elsevier, 2018.

**TKDE:** IEEE Transactions of Knowledge and Data Management, 2018.

**INRT:** Information Retrieval Journal, 2018.

**AJSE:** Arabian Journal for Science and Engineering, 2018.

**SoAPS:** Workshop on Social Aspects in Personalization and Search co-located with ECIR conference, 2018.

**AFEL:** Analytics for Everyday Learning Workshop co-located with ECTEL conference, 2018.

**WebSci:** Int. ACM Web Science Conference, since 2017.

**SNAM:** Social Network Analysis and Mining Journal, 2017.

**C&E:** Computers and Education Journal, 2017.

**TLT:** Transactions on Learning Technologies, 2017.

**SNAMS'2017:** Int. Symp. on Social Networks Analysis, Management and Security, 2017.

**OpenSym:** Int. Symp. on Open Collaboration, 2017.

**MSM:** Social Media Workshop co-located with WWW, since 2015.

**UMAP:** ACM Conf. on User Modelling, Adaption and Personalization, since 2014.

**EC-TEL:** EU Conference on Technology Enhanced Learning, since 2014 (since 2020 as leading reviewer).

## **Presentations at International Conferences**

**WF'2024:** Invited speaker and panelist on trustworthy AI in the labor market at the Wissenschaftsforum. Köln, Germany.

**ECIR'2023:** Demo/poster session and Bias Workshop of the 45th European Conference on Information Retrieval. Dublin, Ireland.

**ECIR'2022:** Poster session, Industry track and Bias Workshop of the 44th European Conference on Information Retrieval. Stavanger, Norway.

**EBDVA'2022:** Panel discussion on trustworthy AI and EU AI Act as part of the European Big Data Value Forum. Prague, Czech Republic.

**DataWeek'2021:** Panel on Breaking silos in data innovation in Europe as part of BDVA Data Week. Online event.

**ECIR'2020:** Reproducibility track of the 42nd European Conference on Information Retrieval. Lisbon, Portugal (online due to COVID-19).

**RECSYS'2019:** Poster session of the REVEAL workshop co-located with RECSYS'2019. Copenhagen, Denmark.

**EUROCSS'2019:** Pecha Kucha and poster sessions of the EU Symp. on Computational Social Science. Zurich, Switzerland.

**EUROCSS'2018:** Pecha Kucha and poster sessions of the EU Symp. on Computational Social Science. Cologne, Germany.

**CSS-SummerSchool'2019:** Madness session and mini-project presentation. Berlin, Germany.

**CIKM'2018:** Paper session of the Social Interaction-Based Recommender Systems Workshop co-located with CIKM'2018. Turin, Italy.

**WWW'2018:** Poster session of the 27th International World Wide Web Conference. Lyon, France.

**EUROCSS'2017:** Algorithms paper and poster sessions of the EU Symp. on Computational Social Science. London, England.

**UMAP'2017:** Poster session of the 25th Conference on User Modeling, Adaption and Personalization. Bratislava, Slovakia.

**WWW'2017:** Data Mining paper session of the 26th International World Wide Web Conference. Perth, Australia.

**HT'2016:** Social Media Analytics paper session of the 27th ACM Conference on Hypertext and Social Media. Halifax, Canada.

**CSSWS'2015:** Pecha Kucha and poster session of the 2nd Computational Social Sciences Winter Symp. Cologne, Germany.

**RECSYS'2015:** Short paper at 9th ACM RecSys Conf. Vienna, Austria.

**WWW'2015:** PhD Symp. of the 24th Int. WWW Conf. Florence, Italy.

**i-Know'2015:** Demo session of 15th Int. Conference on Knowledge Technologies. Graz, Austria (best demo honourable mention award).

**WWW'2014:** WebScience track and Social Recommender Systems Workshop of the 23rd International World Wide Web Conference. Seoul, Korea.

**i-Semantics'2013:** Minute madness and poster session of the 9th Int. Conference on Semantic Systems. Graz, Austria.

## (Co-)Supervised Theses

**Supervision:** Florian Atzenhofer-Baumgartner. Recommender Systems in Digital Humanities. PhD thesis. TU Graz. 2024-2026.

**Supervision:** Ioana Serban. Bias in Public Datasets. Master thesis and project. TU Graz. 2023-2024.

**Supervision:** Harald Semmelrock. Reproducibility in Machine Learning Research. Bachelor thesis. TU Graz. 2023.

**Supervision:** Michael Pöchlinger. Metrics to Measure Dataset Quality and Bias in Data. Bachelor thesis and project. TU Graz. 2023.

**Supervision:** Gökay Yildirim. Popularity Bias in Recommender Systems. Erasmus+ internship. TU Graz. 2023.

**Co-supervision:** Tomislav Duricic. Sparsity and Interpretability of Graph-based Recommender Systems. PhD thesis. TU Graz. 2020-2024.

**Co-supervision:** Peter Müllner. Privacy-Aware Recommender Systems. PhD thesis. TU Graz. 2020-2024.

**Co-supervision:** Gregor Mayr. Accuracy, Popularity Lift and Calibration in Recommender Systems. Master project. TU Graz. 2022.

**Co-supervision:** Gregor Mayr. Calibration in Recommender Systems. Bachelor thesis. TU Graz. 2022.

**Co-supervision:** Mario Wagner. Diversity-Aware Recommendation of Tweets. Master thesis. TU Graz. 2020.

**Co-supervision:** Peter Müllner. Studying Non-Mainstream Listening Behavior For Music Recommendations. Master thesis. TU Graz. 2019.

**Co-supervision:** Andreas Punz. Detection and Analysis of Communities on Twitter. Bachelor thesis. TU Graz. 2016.

## Teaching Certificates

**Advanced Teaching certificate:** TU Graz Teaching Academy. 2023.

**Basic Teaching certificate:** TU Graz Teaching Academy. 2022.

## Scientific Publications

**ORCID:** <https://orcid.org/0000-0003-3230-6234>

**Google Scholar:**

<https://scholar.google.at/citations?user=qQ-L8rUAAAAJ>