Marcel Ruoff, Dr.

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Education

Karlsruhe Institute of Technology   **Karlsruhe, DE**
PhD in Information Systems   *Apr 2019 – Mar 2023*
- Supervised by Dr. Alexander Maedche
- Dissertation: Effective Natural Language Interfaces for Data Visualization Tools

Master of Science in Information Systems; Top 1% of cohort   *Apr 2019 – Nov 2021*
Bachelor of Science in Industrial Engineering; Top 2% of cohort   *Oct 2015 – Mar 2019*

Research Experience

Karlsruhe Institute of Technology @ Human-Centered Systems Lab   **Apr 2019 – PRESENT**
Research Assistant   *Karlsruhe, DE*

TeachME: Personalized LLM-based Natural Language Interfaces for Data Visualization Tools
- Designed and developed end-user programming features for LLM-based NLIs in data visualization tools.

Interlytics @EnBW: Multimodal BI&A Systems for Co-Located Team Interactions
- Designed and developed a natural language UI for BI&A systems through iterative design sessions with end users.

Conversational Forecasting UIs @BASF: Guiding Users during Interaction with AI Solutions through Conversations
- Framed field experiment to evaluate the effects of a deployed conversational UI on trust and effective use.

DeborAH @EnBW: Explainable Deep Learning Techniques to support Automation of Accounts Receivable Management
- Focus groups & interviews with end users to understand the missing trust in the current support systems.
- Developed UI features that explain the reasoning of a deep learning algorithm to end users utilizing SHAP values.

Carnegie Mellon University @ HCII   **Sep 2021 – Jan 2022**
Visiting Researcher supervised by Brad A. Myers   *Pittsburgh, USA*

ONYX & MALACHITE: Interactive Task Learning for Natural Language Interfaces of Data Visualization Tools
- Co-located and remote individual participatory design studies using technical probes.
- Developed several prototypes with novel end-user programming features for multimodal data visualization tools.
- Think-aloud studies & online experiments to evaluate the effectiveness of the implemented design principles.

Karlsruhe Institute of Technology @ Web Science Lab   **May 2017 – Apr 2018**
Undergraduate Research Assistant   *Karlsruhe, DE*

STEP: Supporting the Dispatching Process for Maintenance Technicians in Industry 4.0
- Supported the implementation of a data-driven maintenance based on a semantic information model.

Work Experience

PT Mercedes-Benz Indonesia   **Apr 2018 – Aug 2018**
Industrial Engineer Intern   *Bogor, ID*
- Coordinated and managed projects to increase the cost efficiency of operating costs 2017-2021.
- Assessed the IT landscape for the deployment of a daily production system in an international team.

delta Karlsruhe GmbH   **Nov 2016 – Nov 2017**
Managing Director   *Karlsruhe, DE*
- Coordinated and strategically managed 40 consulting projects and project teams.

Ruoff Consulting & delta Karlsruhe GmbH   **Jun 2016 – Mar 2019**
Freelancing Consultant   *Karlsruhe, DE*
- Implemented quality management systems according to DIN EN ISO 9001: 2015 @ Seven2one | Office Mix GmbH | contec GmbH | augeon GmbH & Co. KG
- Trend analysis and competitive preview in future fields @ BHS Sondhofen

Technical Skills

Programming languages: Python, JavaScript, C#, HTML/CSS, SQL
Technologies/Frameworks: Angular, PyGUI, GitHub, Figma   **Developer Tools:** VS Code, Eclipse

Selected Publications

Journal Publications

[1] **Ruoff, M.**, Gnewuch, U., Maedche, A., & Scheibehenne, B. (Forthcoming). Designing Conversational Dashboards for Effective Use in Crisis Response. In *Journal of the Association for Information Systems.*

[2] Gnewuch, U., **Ruoff, M.**, Peukert, C., & Maedche, A. (2022). Multiexperience. In *Business & Information Systems Engineering, 64(6), 813-823.*

Conference Proceedings

[3] **Ruoff, M.**, Myers, B. A., & Maedche, A. (2023). ONYX : Assisting Users in Teaching Natural Language Interfaces Through Multi-Modal Interactive Task Learning. In *CHI Conference on Human Factors in Computing Systems.*

[4] Haug, S., **Ruoff, M.**, & Gnewuch, U. (2022). The Impact of Conversational Assistance on the Effective Use of Forecasting Support Systems: A Framed Field Experiment. In *ICIS 2022 Proceedings.*

[5] **Ruoff, M.**, & Gnewuch, U. (2021). Designing Multimodal BI&A Systems for Co-Located Team Interactions. In *29th European Conference on Information Systems.*

[6] **Ruoff, M.**, & Gnewuch, U. (2021). Designing Conversational Dashboards for Effective Use in Crisis Response. In *29th European Conference on Information Systems.*

[7] Fleiner, C., Riedel, T., Beigl, M., & **Ruoff, M.** (2021). Ensuring a Robust Multimodal Conversational User Interface During Maintenance Work. In *Mensch und Computer 2021.*

Extended Abstracts and Workshop Papers

[8] **Ruoff, M.**, Myers, B. A., & Maedche, A. (2022). ONYX-User Interfaces for Assisting in Interactive Task Learning for Natural Language Interfaces of Data Visualization Tools. In *CHI Conference on Human Factors in Computing Systems Extended Abstracts.*

[9] **Ruoff, M.**, Myers, B. A., & Maedche, A. (2022). Towards Interactively Contextualizing Natural Language Input in Data Visualization Tools. In *NLVIZ Workshop: Exploring Research Opportunities for Natural Language, Text, and Data Visualization.*

[10] **Ruoff, M.**, Myers, B. A., & Maedche, A. (2021). ONYX: Towards Extending Natural Language Interfaces for Data Visualization Tools through Interactive Task Learning. In *NLVIZ Workshop: Exploring Research Opportunities for Natural Language, Text, and Data Visualization.*

[11] **Ruoff, M.**, & Maedche, A. (2020). Towards Understanding Multimodal Interaction for Visual Data Analysis. In *31st IEEE Conference on Information Visualization (2020).*