Christina Humer

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Born on April 2nd, 1996

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Google Scholar

Scientific Interests

- Explainable Artificial Intelligence
- AI4Materals
- Visual Analytics

Personal Interests

- Climate Change Mitigation
- klimadashboard.at
- Sports (Hiking, Climbing, Volleyball)
- Travel and Cultural Exchange
- Reading
- Gardening, Mycology, Geology

Technical Skills

- Python, Java, C#
- Tensorflow, Pytorch
- HTML, CSS, JavaScript etc.
- React, Angular, Vue, Svelte
- SQL

Languages

- German (Native)
- English (Fluent)
- French (Learning)

Current Situation

Since Sep. 2020 **PhD Student and Project Assistant**

Visual Data Science Lab, Institute of Computer Graphics Johannes Kepler University, Linz.

My current research focuses on explainable artificial intelligence, visual analytics, and AI for climate change mitigation.

Education

2020 **MSc in Computer Science** with a focus on **Data Science** at Johannes Kepler University Linz, AT.
Thesis title: *Early Detection of Spruce Bark Beetles using Semantic Segmentation and Image Classification.*

2018 **BSc in Computer Science** at Johannes Kepler University Linz, AT.
Summer Term 2017 at Dublin City University, IE.

2015 **Leaving Certificate** at Higher Technical and Vocational College for Information Technology and Organisation in Grieskirchen, AT.

Internships and Research Exchange

Mar.-Jul. 2024 Internship at the **Mila Quebec AI Institute** in Montreal, CA. Use of machine learning for accelerating scientific discoveries for climate change mitigation.

Apr.-Jul. 2023 Research Exchange at the **MIT-IBM Watson AI Lab** in Cambridge, MA, USA. Development of an interpretation technique for understanding multi-modal models.

Aug.-Sep. 2019 Internship at **Cubido** in Leonding, AT. Development of an automated workflow for preprocessing and analysing temporal data.

Scientific Publications

This is a selection of articles I published. See Google Scholar or my personal website for a list of all publications.

Humer, C., Hinterreiter, A., Leichtmann, B., Mara, M., Streit, M. **2024** Reassuring, Misleading, Debunking: Comparing Effects of XAI Methods on Human Decisions *ACM Transactions on Interactive Intelligent Systems* 14, 3. DOI: 10.1145/366564

Humer, C., Nicholls, R., Heberle, H., Heckmann, M., Puehringer, M., Wolf, T., Luebbesmeyer, M., Heinrich, J., Hillenbrand, J., Volpin, G., Streit, M. **2024** CIME4R: Exploring iterative, AI-guided chemical reaction optimization campaigns in their parameter space *Journal of Cheminformatics* 16, 51. DOI: 10.1186/s13321-024-00840-1

Humer, C., Prasad, V., Streit, M., Strobelt, H. **2023** Understanding and Comparing Multi-Modal Models *VISxAI 2023*. url: jku-vds-lab.at/amumo

Hintereiter, A., Humer, C., Kainz, B., Streit, M. **2023** ParaDime: A Framework for Parametric Dimensionality Reduction *EuroVis 2023*. DOI: 10.1111/cgf.14834

Leichtmann, B., Hinterreiter, A., Humer, C., Streit, M., Mara, M. **2023** Explainable Artificial Intelligence improves human decision-making: Results from a mushroom picking experiment at a public art festival *Journal of Human-Computer Interaction*. DOI: 10.1080/10447318.2023.2221605

Leichtmann, B., Humer, C., Hinterreiter, A., Streit, M., Mara, M. **2022** Effects of Explainable Artificial Intelligence on trust and human behavior in a high-risk decision task *Computers in Human Behavior 139, 107539*. DOI: 10.1016/j.chb.2022.107539

Humer, C., Heberle, H., Montanari, F., Wolf, T., Huber, F., Henderson, R., Heinrich, J., Streit, M. **(2022)** ChemInformatics Model Explorer (CIME): Exploratory Analysis of Chemical Model Explanations *Journal of Cheminformatics* 14, 21. DOI: 10.1186/s13321-022-00600-z

Humer, C., Elharty, M., Hinterreiter, A., Streit, M. **2022** Interactive Attribution-based Explanations for Image Segmentation *EuroVis 2022*. DOI: 10.2312/evp.20221130

Preprints

Humer, C., Rumetshofer, E., Sánchez, A., Prasad, V., Klambauer, G., Streit, M., Stobelt, H. **(2024)** Understanding and Comparing Latent Space Characteristics of Multi-Modal Models *The Journal of Visualization and Interaction*. url: https://www.journalovi.org/2024-humer-amumo/

Talks, Presentations, and Exhibitions

Oct. 2023 **VISxAI 2023**, Online. *Understanding and Comparing Multi-Modal Models*.

Sep. 2022 (Ongoing) **Ars Electronica Center Exhibitions** in Linz, AT. *AI Forest*.

Jun. 2022 **EuroVis 2022 Posters** in Rome, IT. *Interactive Attribution-based Explanations for Image Segmentation*.

Oct. 2021 **10th RDKit User Group Meeting**, Online. *CIME: Exploratory and Explanatory Visualization of Molecules and Chemical Models*.

Sep. 2021 **Ars Electronica Festival 2021 Exhibitions** in Linz, AT. *AI Forest*.

Awards and Scholarships

2024 **Best Paper Award** at International Conference on Auditory Displays (ICAD'24) .

2023 **Best Submission Award** at Workshop on Visualization for AI Explainability (VISxAI'23).

2023 **Marshall Plan Scholarship** for academic exchange between Austria and the U.S. granted by the Austrian Marshall Plan Foundation.

2019 **Award for excellent performance as a student** (Leistungsstipendium) granted by the Faculty of Computer Science, Johannes Kepler University Linz.

2018 **Award for excellent performance as a student** (Leistungsstipendium) granted by the Faculty of Computer Science, Johannes Kepler University Linz.