Updated: April 1, 2024
PDF version of online CV

Max Pellert, PhD

maxpe@gmx.com mpellert.at Google Scholar Profile

Education

University of Konstanz, **Professor** 04/2024 - 09/2024

Professor for Social and Behavioural Data Science (interim, W2)

Konstanz, Germany

Interim full professorship with full teaching obligations
Responsible for teaching "Deep Learning for the Social Sciences", "Social Media Data Analysis" and "Computational Modelling of Social Systems"
Research in the area of Data Science, Computational Social Science and AI

University of Mannheim, **Assistant Professor** 11/2022 - Present

Chair for Data-Science in the Economic and Social Sciences, Business School of the University of Mannheim

Member of Junior Faculty, Habilitand
(with Prof. Dr. Markus Strohmaier)

Mannheim, Germany

Conducted research projects and published results in the area of Data Science, NLP and the Social Sciences, recent works include AI Psychometrics, analyses of semantic embeddings, RAG
Wrote several grant applications both for national and EU agencies
Acquired computing equipment (GPU cluster, storage server, work station) through a public procurement procedure (150 000€)
Responsible for teaching: Semester course "Large Scale Data Analysis and Visualization" for master students of Business Informatics, Data Science, Business Administration and Economics; Phd level seminar in NLP and Master seminars
Leadership experience in the management of interdisciplinary team projects
Supervision of several master theses, advisor to PhD researchers

Sony Computer Science Laboratories Rome, **Assistant Researcher** 10/2021 - 10/2022

Project "Information and social dialogue"

Rome, Italy

Postdoctoral research experience in industry
Worked as an NLP expert on data sets of Italian and English news texts
Involvement as data scientist in a large EU-funded Art & Science project to develop an interactive visualization of geospatial data on waste mobility in Rome
Published study on validation of text analysis in an established multidisciplinary journal in collaboration with DerStandard.at

Medical University of Vienna, **PhD** 12/2017 - 30/04/2022

Medical Informatics, Biostatistics & Complex Systems

Analysing the digital traces of individual and collective emotional behaviour
(PhD Thesis, supervised by Prof. David Garcia, Faculty of Computer Science and Biomedical Engineering, Graz University of Technology)

PhD position in the WWTF funded research group "Emotional Well-Being in the Digital Society" with core methodological skills: Text analysis using simple, dictionary-based as well as with complex approaches based on deep learning architectures and large-scale data scraping, handling and analyses (social media and other online contents)
Research areas include: Decay of expressed emotions of users on social media, emotional expressions of populations during COVID-19 and perception of human-robot interaction
Published a number of articles in collaboration with diverse, interdisciplinary, international scientists from disciplines such as psychology, computer science, physics and mathematics
Developed and publicly shared my own transformer models for emotion detection from short social media texts
Co-authored a chapter in the "World Happiness Report 2022"

University of Vienna & University of Ljubljana, **M.Sc. (with distinction)** 11/2017

Middle European interdisciplinary master programme in Cognitive Science (MEi:CogSci)

Collective Dynamics of Multi-Agent Networks: Simulation Studies in Probabilistic Reasoning
(Master Thesis, supervised by Univ.-Lektor Dipl.-Ing. Dr. Paolo Petta, OFAI)

Selective, highly interdisciplinary master program with obligatory research semester abroad (University of Ljubljana)
Research projects at the intersection of Economics, Psychology and AI
Published my master thesis in one of the most renowned journals in Philosophy of Science

University of Vienna, **Bakk. rer. soc. oek.** 10/2014

Bachelor programme in Economics

Some Remarks on the Genesis of the Neoclassical Paradigm In Economics
(Bachelor Thesis I, supervised by ao. Univ.-Prof. Mag. Dr. Reinhard Pirker, Vienna University of Economics and Business)

Popper and McCloskey. Logic or Rhetoric of Science?
(Bachelor Thesis II, supervised by ao. Univ.-Prof. Mag. Dr. Karl Milford, University of Vienna)

Wrote two bachelor thesis, one at University of Vienna, one at WU
Focused on interdisciplinary approaches, specifically on "heterogenous expectations" as alternatives to theories of rational expectation

Additional Research Experience

Technical University of Graz — Dec 2020 – Sep 2021
Affiliation to Computational Social Science Lab (CSS Lab)

Complexity Science Hub Vienna — Dec 2017 – Sep 2021
During PhD studies located at Complexity Science Hub Vienna (CSH)

Selected Media Coverage

Deutschlandfunk Kultur: "Rollenspiele mit Large Language Models"

Mannheimer Morgen: "Studie aus Mannheim: Warum KI in Bewerbungsprozessen Frauen benachteiligt"

Business Insider: "Studie enthüllt: Sprachbasierte KIs haben verborgene Moralvorstellungen"

Telepolis: "KI entlarvt: Was Maschinen wirklich über uns denken"

tagesschau.de: "Können Psychologie-Tests Vorurteile von KI aufdecken?"

SWR: "Können Psychotests problematische Vorstellungen von KI-Modellen aufdecken?"

Tagesspiegel Background: "Sprachbasierte KI reproduziert genderspezifische Vorurteile"

SWR3: "Bewertung mit Vorurteilen: Wie Sprach-KIs bei Psychotests abschneiden"

Westfälische Nachrichten: "Sprachbasierte KI reproduziert Vorurteile"

SWR2 Journal am Mittag: "Interview AI Psychometrics"

inf. Das Informatikmagazin: "KI: Nicht ohne Eigenschaften"

DerStandard: "STANDARD-User kamen mehrheitlich ohne Stimmungstief durch den Lockdown"

Awards

S+T+ARTS Prize 2023 — Sep 2023
TRACEWASTE (Project part: Data Scientist)
Ars Electronica

Mind the Gap Diversity Award 2022 — Oct 2022
Graz University of Technology

Research Stays

Santa Fe Institute — May 2022
Mirta Galesic & Henrik Olson
(Santa Fe, New Mexico, U.S.)
Invited research stay at SFI for research collaboration, networking and giving a talk

Publications

1. Pellert, M., Lechner, C. M., Wagner, C., Rammstedt, B., & Strohmaier, M. (2024). AI Psychometrics: Assessing the Psychological Profiles of Large Language Models Through Psychometric Inventories. *Perspectives on Psychological Science*. https://doi.org/10.1177/17456916231214460

2. Fraxanet, E., Pellert, M., Schweighofer, S., Gómez, V., & Garcia, D. (2023, July). Unpacking polarization: Antagonism and Alignment in Signed Networks of Online Interaction. arXiv. Available at http://arxiv.org/abs/2307.06571

3. Metzler, H., Rimé, B., Pellert, M., Niederkrotenthaler, T., Di Natale, A., & Garcia, D. (2022). Collective emotions during the COVID-19 outbreak. *Emotion*. https://doi.org/10.1037/emo0001111

4. Metzler, H., Pellert, M., & Garcia, D. (2022). *Using Social Media Data to Capture Emotions Before and During COVID-19* (World Happiness Report 2022). Available at https://worldhappiness.report/ed/2022/using-social-media-data-to-capture-emotions-before-and-during-covid-19/

5. Pellert, M., Metzler, H., Matzenberger, M., & Garcia, D. (2022). Validating daily social media macroscopes of emotions. *Scientific Reports*, *12*(1), 11236. https://doi.org/10.1038/s41598-022-14579-y

6. Di Natale, A., Pellert, M., & Garcia, D. (2021). Colexification Networks Encode Affective Meaning. *Affective Science*. https://doi.org/10.1007/s42761-021-00033-1

7. Savela, N., Oksanen, A., Pellert, M., & Garcia, D. (2021). Emotional reactions to robot colleagues in a role-playing experiment. *International Journal of Information Management*, *60*, 102361. https://doi.org/10.1016/j.ijinfomgt.2021.102361

8. Savela, N., Garcia, D., Pellert, M., & Oksanen, A. (2021). Emotional talk about robotic technologies on Reddit: Sentiment analysis of life domains, motives, and temporal themes. *New Media & Society*, 146144482110672. https://doi.org/10.1177/14614448211067259

9. Pellert, M., Schweighofer, S., & Garcia, D. (2021). Social Media Data in Affective Science. In U. Engel, A. Quan-Haase, S. X. Liu, & L. Lyberg (Eds.), *Handbook of Computational Social Science, Volume 1: Theory, Case Studies and Ethics* (First, pp. 240–255). London: Routledge. https://doi.org/10.4324/9781003024583-18

10. Garcia, D., Pellert, M., Lasser, J., & Metzler, H. (2021). Social media emotion macroscopes reflect emotional experiences in society at large. *arXiv:2107.13236 [Cs]*. Available at https://arxiv.org/abs/2107.13236

11. Pellert, M., Lasser, J., Metzler, H., & Garcia, D. (2020). Dashboard of sentiment in Austrian social media during COVID-19. *Frontiers in Big Data*, *3*. https://doi.org/10.3389/fdata.2020.00032

12. Pellert, M., Schweighofer, S., & Garcia, D. (2020). The individual dynamics of affective expression on social media. *EPJ Data Science*, *9*(1), 1. https://doi.org/10.1140/epjds/s13688-019-0219-3

13. Trpin, B., & Pellert, M. (2018). Inference to the Best Explanation in Uncertain Evidential Situations. *The British Journal for the Philosophy of Science*. https://doi.org/10.1093/bjps/axy027

14. Pellert, M. (2017). Collective Dynamics of Multi-Agent Networks: Simulation Studies in Probabilistic Reasoning. In P. Hochenauer, C. Schreiber, K. Rötzer, & E. Zimmermann (Eds.), *Proceedings of the MEi: CogSci Conference 2017*. Budapest, Hungary: Comenius University in Bratislava, Slovakia.

15. Pellert, M. (2016). Are Heterogeneous Expectations a Viable Alternative to Rational Expectations in Economics? In S. Ersoy, P. Hochenauer, & C. Schreiber (Eds.), *Proceedings of the MEi: CogSci Conference 2016*. Vienna, Austria: Comenius University in Bratislava, Slovakia.

Supervision of Master Theses

Alexander Gerhold "Understanding the Ability of Large Language Models to Capture Information About Societies"

Henry Rogner "Analyzing emotions and ideology in user posts on a news platform using advanced text analysis methods"

ongoing: Florian Siebels "Measuring and Validating Collective Emotions on a German Online Newspaper Platform in the course of the COVID-19 Pandemic"

ongoing: Maria Schlüter "Working Title: Validating synthetic data approaches"

Advisor to PhD Researchers

ongoing: Emma Fraxanet "Structural Analysis and Application of Antagonistic Interactions in Online Social Networks"

Teaching

Deep Learning for the Social Sciences Apr - Sep 2024
Max Pellert & Giordano De Marzo
(University of Konstanz)
This course offers a deep dive into advanced neural network architectures and their applications in the social sciences.
4 SWS (9 ECTS)

Computational Modeling of Social Systems Apr - Sep 2024
Max Pellert & Giordano De Marzo
(University of Konstanz)
This introductory course on computational modelling will introduce the students to the question of explaining human behavior across levels of analysis. Following a complexity science approach, the course will illustrate the basics of computational modelling with models that explain various kinds of human behavior.
4 SWS (6 ECTS)

Social Media Data Analysis Apr - Sep 2024
Max Pellert
(University of Konstanz)
Social media data analysis is introduced as a set of techniques to analyze human behaviour and social interaction through openly-available digital traces. The course focuses both on the fundamentals and applications of data science to social media, including technologies for data retrieval, processing, and analysis with the aim to derive insights that are interpretable from a wider theoretical perspective.
4 SWS (9 ECTS)

IS 616 Large Scale Data Analysis and Visualization Sep - Dec 2023
Max Pellert
(University of Mannheim)

This course teaches students principles of scientific visualization of data using R and Python. Starting from introductory large scale data handling and basics of visualization, more advanced methods for visualization will also be covered. Important libraries and frameworks that are essential for data analysis and visualization are introduced.
4 SWS (6 ECTS)

IS 809 Advanced Data Science Lab II (Text Mining) Feb - Jun 2023
Markus Strohmaier & Max Pellert
(University of Mannheim)
PhD course with a focus on Natural Language Processing (NLP) methods, ranging from simple dictionary-based approaches to advanced, state of art methods that are based on neural networks.
4 SWS (6 ECTS)

Team Projects Data Science Feb - Sep 2023
Max Pellert & Tobias Schumacher
(University of Mannheim)
Hands-on research project for a group of 5 students on the topic "Biases in Football Discussions on Social Media" (Master's level)
4 SWS (12 ECTS)

IS 723 Seminar Data-Science II (Empirical Studies) Feb - Jun 2023
Max Pellert & Tobias Schumacher
(University of Mannheim)
Participants familiarize themselves with one topic in data science and embed it into the field (Master's level)
2 SWS (6 ECTS)

Workshop on computational text analysis - from basic to advanced techniques Feb 2023
Aleksandra Urman & Max Pellert
(Internal GESIS Workshop)
Intense 4 days block course teaching basic text analysis methods, sentiment analysis and advanced NLP methods using neural nets in R & Python.
32 hours

Exercises in Computational Social Science using Python Feb - Sep 2023
(Summer Institute for Computational Social Science (SICSS) hosted in Aachen & Graz)
As part of the larger summer school program, teaching hands-on exercises in Python focusing on replicating data analysis pipelines from existing scientific publication and introducing transformer models for NLP.
4 SWS (12 ECTS)

Introduction to Computational Social Science with Applications in R Sep 2021/22/23
Aleksandra Urman & Max Pellert
(GESIS Fall Seminar in Computational Social Science 2021/22/23)
Intense one week block course teaching text analysis methods, web scraping, visualization and ethics of CSS research in an hands-on approach using R.
40 hours

Qualification Activities

Bewerbungstraining für Berufungsverfahren (6h, Deutscher Hochschulverband)

FWF-Coaching-Workshop "Förderantrag einreichen" (5h, Austrian Science Fund)

Karriereplanung in der Wissenschaft (2h30m, Deutscher Hochschulverband)

Spread your science – Digitale Sichtbarkeit in der Wissenschaft (8h, Susanne Geu)

Invited candidate in academic hearings

Assistant Professor tenure track, qualification agreement 2024
Institute for Cognition & Behavior at WU Vienna

Community Service

I review manuscripts for different academic journals and conferences including Science, Scientific Reports, EPJ Data Science, ACM Web Science Conference, Psychology of Language and Communication, Internationale Tagung Wirtschaftsinformatik, Plos One, Journal of Social Computing and Online Social Networks and Media. I also review fellowship and grant applications (for example for CAIS - Center for Advanced Internet Studies).

Art and Science

TRACEWASTE Feb - Oct 2022
Susi Gutsche, SONY Computer Science Laboratories Rome, MAXXI – Museo nazionale delle arti del XXI secolo
Involvement in many steps of this Art and Science project, especially in data processing and visualization. Developed an interactive interface and map animation with the collected geospatial data on waste mobility using mapbox, deck.gl and turf.js as part of the final project installation exhibited at MAXXI museo.

Conferences

I regularly present my work at IC2S2. I was part of conferences such as Euro CSS and ISRE in CSS and (emotional) psychology and NeurIPS in NLP. I took part in summer and winter schools such as European Consortium for Political Research (ECPR) Summer School, Complexity Science Hub Vienna Winter School, Interdisciplinary College and Summer School on Computational Methods and Simulation for Economics. I presented my work in workshops at the Munich Center for Mathematical Philosophy, INET Workshop at Festival dell'Economia in Trento and IMK-Workshop at Hans-Böckler-Stiftung. For the full list see my webpage.

Important Talks

KION Group Feb 26 2024

Invited talk for the internal "Global AI Expert Community"

SWR KI-Stammtisch Jan 22 2024

Invited talk at recurring internal event on latest developments in AI for all editors and journalists at SWR

Technical University of Graz Nov 7 2023

Invited guest talk: "Methods of Computational Affective Science"

Santa Fe Institute May 9 2022

Invited seminar talk: "Validating daily social media macroscopes of emotions"

IC2S2 2021 July 27 – 30 2021

7th International Conference on Computational Social Science (Talk: "Validating social media macroscopes of emotions")

Euro CSS 2019 September 2 – 4 2019

European Symposium Series on Societal Challenges in Computational Social Science 2019: Polarization and Radicalization (Participant in the Science Slam)

ISRE 2019 July 10 – 13 2019

Conference organised by the "International Society for Research on Emotion" (Talk: "Analysing affective dynamics through sentiment in social media status updates")

Workshop: Inferentialism, Bayesianism, and Scientific Explanation January 25 – 26 2017

Talk: "Inference to the Best Explanation in Cases of Uncertain Evidence"

Theses

"Analyzing the digital traces of individual and collective emotional behavior" (PhD Thesis)

"Collective Dynamics of Multi-Agent Networks: Simulation Studies in Probabilistic Reasoning (Master Thesis)

Key Terms

interdisciplinary, computer science, social sciences, computational methods, natural language processing, deep learning, belief updates, emotional decay, polarization, measurements from textual data, semantic embeddings, psychometric aspects of large language models