

# BENEDIKT KLEPPMANN

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NATIONALITY: GERMAN

## IT SKILLS

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**Languages:** Python, R, Java, Matlab, Javascript, CUDA, C++, VBA

**Knowledge Areas:** Machine Learning, Statistics, Complex Systems, Computer Science, Simulation Science

## PROFESSIONAL AND RESEARCH EXPERIENCE

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**12.2021 – now**     **Springer-Verlag GmbH**  
**Data Engineer**

- Developed and maintained large-scale data pipelines (Python, Apache Airflow, DBT, Cloud Functions, BigQuery, Google Cloud)
- Led the implementation of new technologies (e.g., Google Cloud, SN Cloud, dbt, Terraform, Looker, Okta, etc.) across the team
- Analyzed requirements and created data visualizations for business stakeholders

**09.2018 – now**     **Innovationszentrum Aalen**  
**Self-employed Researcher & Developer (full-time 2018–2021; part-time since 2022)**

- Designed and developed a novel data modeling approach (Fundamental Theory Building) based on Bayesian inference and complex system simulations
- Built the online platform [www.treeofknowledge.ai](http://www.treeofknowledge.ai) to implement, test and evaluate the approach (Python, JavaScript, server administration)
- Collaborated with two sociology research teams to apply the framework to empirical problems and presented results in academic settings

**04.2017 – 08.2018**     **University of Mannheim**  
**Research Associate**

- Developed algorithms for integrating large-scale datasets (Java, efficient Machine Learning)
- Performed scientific evaluation and documentation of algorithmic performance and scalability.

**03.2016 – 02.2017**     **Msales GmbH, Karlsruhe**  
**Data Scientist**

- Built supervised learning models and generated features for bot detection (Python, machine learning, probabilistic modelling)
- Evaluated classification rules and generated quality metrics for model assessment.

**11.2013 – 01.2016**     **Aon Centre for Innovation and Analytics (ACIA), Dublin, Ireland**  
**Data Scientist / ETL Developer / Operational Data Analyst**

- Developed data matching methods (Python, NLP, Web Scraping)
- Operated and maintained ETL systems (Datastage, SQL); automated data quality validation

## EDUCATION

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- 2012 – 2013**      **Dublin Institute of Technology, Dublin, Ireland**  
Postgraduate Diploma in Advanced Software Development
- Master's Thesis: *Automatic Table Extension with Open Data* (Classification Models, Search Indexes, Imputation)
- 2008 – 2012**      **University of Cergy-Pontoise (UCP), France**  
Licence in Physics and Simulation (BSc)
- Graduated 3rd in class (of 23 students); Award for outstanding achievement
  - Coursework in Statistical Physics, Numerical Simulation, and Computing for Physicists (Matlab, R, Fortran, Gnuplot)
  - Bachelor's Thesis: *Computer Simulation and Visualization of Nonlinear Systems/Models* (Matlab, Gnuplot)
- 2005 – 2008**      **Technical High School, Aalen, Germany – IT Program**
- Final grade: 1.7 (Award)

## PUBLICATIONS

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- Kleppmann, B., Bizer, C., Yaqub, E., Temme, F., Schlunder, P., Arnu, D., & Klinkenberg, R. (2018). *Density- and Correlation-based Table Extension*. In LWDA (pp. 191–194).
- Herget, F., Kleppmann, B., Ahrweiler, P., Gruca, J., & Neumann, M. (2022). *How Perceived Complexity Impacts on Comfort Zones in Social Decision Contexts*—Combining Gamification and Simulation for Assessment. In *Advances in Social Simulation* (pp. 203–215). Springer International Publishing.
- Kleppmann, B. T. (2021). *Tree of Knowledge: an Online Platform for Learning the Behaviour of Complex Systems*. arXiv preprint arXiv:2103.03666 (preprint).

## INDEPENDENT LEARNING

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- 2012-2025**
- Took Coursera courses on Statistics, Machine Learning, and Game Theory
  - Further training in Python, Agile, ITIL
  - Used textbooks and online resources to learn most areas of Machine Learning (NLP, reinforcement learning, deep learning, etc.), classical AI (knowledge representations, statistical-relational learning, description logics, etc.), Statistical Modelling, Bayesian Inference methods and techniques for large-scale simulations

## ACTIVITIES AND INTERESTS

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- Languages**      German and English (grew up bilingually), French (fluent).
- Sports**          Cycling, climbing, hiking and juggling.
- Travel**          Volunteered in a children's home in India. Travelled extensively throughout Europe. Worked for 5 weeks on an organic farm in France.
- Music**          Play the piano socially. Played bass guitar in a band for 3 years.