



Bernd Malle

SW Developer



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About me

As an enthusiastic Software developer, I focus on full-stack, real-time SW development enriched with graph-based problem solving.

Combining sound, scientific thinking with a practical, entrepreneurial spirit, I strive to devise innovative algorithmic approaches that scale.

Currently working as a freelancer, I am also applying my passion to creating Lemonphi, a skill- and goal-based knowledge recommender for online collaboration platforms.

Top Skills

evolutionary thinking

front-end development

APIs, services

SW design & testing

talks & presentations

graph based computing

startup development

Core beliefs & interests

- Distributed ML. Highly centralized data infrastructures will subside to swarms of computational nodes drawing from overlapping knowledge bases ("*local spheres*"), exchanging insights about their conclusions when needed.
- Explainability + Privacy. Distributed ML will enable us to build software that scales at marginal cost & utilize highly-personalized data without exposing them, thus overcoming the *Explainability vs. Privacy* conundrum.
- Context over mass. Modern AI is still incapable of understanding simple snippets like "*At the airport. Will be back in 2 weeks*" without context (sender is *wife* vs. sender is *boss*). Context triggers a slew of useful inferential insights (*divorce* vs. *promotion*); thus millions of training samples could be replaced by a small, contextual knowledge graph.
- Decentralized organizations. Driven by self-motivation, collaborative goal-seeking as well as highly automated integration & delivery pipelines, the next generation of organizations will be able to operate in very small teams distributed globally, with independent development cycles.

Experience

- 2021→ Working on various SW projects related to *Radiological image transfer, visualization & interaction* at *SustSol GmbH* (ongoing)
- 2020-2021 Working on the *EU Horizon 2020*-funded project "*Feature Cloud*" while being employed at *Medical University Graz (MUG)*
- 2019-2020 Founded *Inodis*; joined *UT11* as '*Entrepreneur in Residence*'
- 2016-2018 Working on the Austrian *KIRAS*-funded project "*Darknet*"
- 2015-2018 IT Security Researcher @ *SBA Research GmbH*, Vienna, Austria
- 2016-2017 Supervised 2 BSc. theses and 1 MSc. project
- 2015-2016 Project *Graphinius*: An interactive graph exploration platform
- 2014-2015 Project *iKnodis*: Graph extraction from medical images
- 2014-2018 Member of the *HCI-KDD* research group at *Medical University Graz*
- 2009-2014 Independent Software / Web developer on a contractual basis
- 2008-2009 Programmer at *Siemens Medical*, Graz, Austria

Education

- 2016-2020 Ph.D. candidate in Computer Science TU Graz
Research in graph-based Machine Learning, dropped out
- 2014-2016 M.Sc. software engineering TU Graz
Thesis in *Graphinius - an online graph exploration platform*
- 2005-2014 B.Sc. software engineering & business administration TU Graz
Thesis in *graph extraction from image data*
- 2002-2005 Studies of Economics KF University, Graz
Special interest in political economics; dropped out
- 1999-2002 Abendmatura @ College of further education Graz, Austria
Specializing in mathematics and physics.
- 1997-1998 ITCP Information Technology Certified Professional Wifi Graz

Publications (selected)

- 2021 *Towards multi-modal causability* with graph neural networks
- 2018 *The Need for Speed*. Comparison of JS vs. C++ -> (W)ASM
- 2017 *Interactive Anonymization for Privacy aware ML*
- 2017 *The more the merrier* - federated ML from local spheres
- 2017 *Do not disturb?* - classifier behavior on perturbed datasets
- 2016 *The Right to be forgotten*. ML on perturbed knowledge bases
- 2014 *On graph extraction from image data*.

Conference talks

- 2017 ECML - European Conf. on Machine Learning, Skopje, Macedonia
- 2017 CD-MAKE - ML and Knowledge Extraction, Reggio Calabria, Italy
- 2017 ARES - Availability, Reliability & Security, Reggio Calabria, Italy
- 2017 Security Forum Hagenberg, Linz, Austria
- 2016 ÖGAI (Austrian society for AI) Meeting, Klagenfurt, Austria
- 2016 ARES - Availability, Reliability & Security, Salzburg, Austria