Bernd Malle

SW Developer

8 October 1979

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About me

Bernd is an enthusiastic Software guy interested in combining client-side (Web) development with algorithmic problem solving.

He is currently applying his skills to creating iNodis, a next generation online recommendation service running on personalized, context-aware graphs directly on the client.

Although Bernd left his academic work for entrepreneurial challenges, he retained a scientific mind-set and sound, experimental approach.

Skills

evolutionary thinking

JS algorithmic development

organizational & constructive attitude

presentation

web development

graph implementation & testing

software modeling

negotiation & communication

(*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).]

Core beliefs & interests

- Client-side ML. Highly-centralized data infrastructures will subside to swarms of client nodes predicting on overlapping knowledge bases (*"local spheres"*), exchanging insights about their conclusions when needed.
- Scalability & Privacy. CS-ML will enable us to build networks that scale at almost no cost to the provider & make use of highly-personalized data without transmitting them, thus solving the KI vs. Privacy conundrum.
- Context over mass. Modern AI is hopelessly incapable of understanding simple snippets like *"At the airport. Will be back in 2 weeks"* while knowing the context (sender is *wife* vs. *boss*) triggers a slew of useful inferential data. Thus millions of samples can be replaced by a small contextual knowledge graph.
- Distributed startup. Given the above ideas & a micro-service oriented architecture, the next generation of startups will be able to operate in very small teams distributed globally, with independent development cycles.
- Current software interests. Front-end frameworks, data-driven SVGs, compiling from server-side languages (C++, Rust) to Webassembly.
- Current theoretical interests. Graph theory (partitioning, parallel centralities), embeddings (words, graphs, everything), context-based ML, split testing & metrics-driven development.

Experience

2016-2018	Member of 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

2016-2018 Ph.D. candidate in Computer Science — TU Graz
Research in privacy-aware Machine Learning, ongoing

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; not graduated

1999-2002 Abendmatura @ College of further education — Graz, Austria
Specializing in mathematics and physics.

1997-1998 ITCP Information Technology Certified Professional — Wifi Graz

Publications (first author)

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

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