Bernd Malle
SW Developer

ℹ 8 October 1979

✉ Graz, Austria

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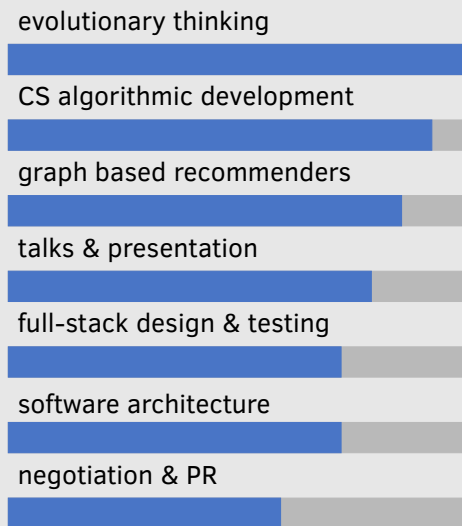
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About me ————

I am an enthusiastic Software guy focusing on merging client-side algorithmic development with graph-based problem solving.

Combining a sound, scientific approach with entrepreneurial challenges, I am striving to devise de-centralized Machine Learning approaches and fuse them into practical applications that scale.

Currently finishing my PhD, I am also applying my passion to creating Inodis, a skill- & goal-based strategy recommender service for online collaboration platforms.

Top Skills ————

evolutionary thinking

CS algorithmic development

graph based recommenders

talks & presentation

full-stack design & testing

software architecture

negotiation & PR

Core beliefs & interests

- **Distributed 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.

- **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* dilemma.

- **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; thus millions of training samples could be replaced by a small contextual knowledge graph.

- **Distributed startups.** Building on the above ideas as well as micro-services, the next generation of startups will be able to operate in very small teams distributed globally, with independent development cycles.

- **Software interests.** Graph DBs & libraries, Rust, Webassembly / Wasi, front-end frameworks, data-driven Visualizations.

- **Scientific interests.** Graph theory (partitioning, parallel algorithms on distributed subgraphs), Graph neural nets, embeddings (documents, nodes, graphs), context-based recommendations.

Experience

2019 →	Founded Inodis; joined *UT11* as *'Entrepreneur in Residence'*
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 →	Ph.D. candidate in Computer Science *Research in graph-based Machine Learning*, ongoing	TU Graz
2014-2016	M.Sc. software engineering Thesis in *Graphinius - an online graph exploration platform*	TU Graz
2005-2014	B.Sc. software engineering & business administration Thesis in *graph extraction from image data*	TU Graz
2002-2005	Studies of Economics Special interest in political economics; not graduated	KF University, Graz
1999-2002	Abendmatura @ College of further education Specializing in mathematics and physics.	Graz, Austria
1997-1998	ITCP Information Technology Certified Professional	Wifi Graz

Publications (selected)

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