

# Nasr Kasrin (PhD)

(SOFTWARE | SOLUTION) ARCHITECT · TECH LEADER · RESEARCH SCIENTIST

96052 Bamberg, Germany

✉ [n42r.me\(at\)gmail\(dot\)com](mailto:n42r.me(at)gmail(dot)com) | 🏠 [n42r.github.io](https://n42r.github.io) | 📄 [nkasrin](https://nkasrin.com)



Dynamic architect, research scientist, and innovative technology lead with a history of guiding successful projects across diverse domains (data architecture, AI, robotics, mobile apps, and games) and settings (from agile B2C environments to multi-million R&D projects). I bring a strategic and creative approach to problem-solving, coupled with decisive initiative and collaborative empathy which fosters success (See [n42r.github.io](https://n42r.github.io)).

## Work Experience

### Solution Architect | Co-Founder | CTO | (Meta)Data Integration Researcher

2021 - present

FREELANCE

Bamberg, Germany

- Co-founding a startup for AI/LLM-driven solutions & building prototypes for products (apps, websites) with millions of potential users.
- Designing and implementing a music recommendation concept utilizing open-source LLMs, with positive feedback from pilot users.
- Developing a next generation (meta)data integration and interoperability technology for publishing and exchanging data assets.

### Research Associate (Lead Data Solutions Engineer | Software Architect | Project Manager)

2015 - 2020

UNIVERSITY OF BAMBERG (EU-FUNDED MANUFACTURING PROJECT)

Bamberg, Germany

- Led a 4-year agile project to develop a data management SaaS platform for a €3.5 million 8-company EU manufacturing project, optimizing data discovery, collaboration, and turnaround time (by 30%), resulting in enhanced operational efficiency (See [github.com/simutool](https://github.com/simutool)).
- Cultivated close relationships with 10+ external partners, facilitating deep domain understanding and precise requirements identification.
- Engineered a read-heavy SaaS, ensuring seamless operations and future-proof cloud-native architecture (ex., docker, stateless nodes).

### Team Lead | R&D Engineer | Software Architect

2011 - 2014

TAYAIT

Cairo, Egypt

- Directed agile teams in developing two enduring mobile apps (iOS), driving app rankings (4.5 stars) and a 10-fold increase in user engagement.
- Reduced feedback-development cycle times by 25% by coordinating cross-functional collaboration between technical, business, and UI/UX.
- Saved the company 10-man months by investigating emerging trends and alternative paths and advising the CEO in fruitful directions.

## Projects (Titles are hyperlinks)

### [Guestrrday & Muze AI](#)

2022 - 2024

- Developed personal open source projects: a music tagging tool (executed 20.000+ inputs) & an early AI-powered music discovery prototype.

### [The Basin Network \(Doctoral Project\)](#)

2019 - 2023

- Invented an architectural pattern for data architecture (Cf. data mesh, data lake), culminating in a PhD and publication.

### [SIMUTOOL Data Lake](#)

2015 - 2019

- Led the design & development of a data management SaaS for a consortium (aerospace, automotive), cutting turnover time by 30%.

### [Greetings Studio & Tawla \(Backgammon Board Game\)](#)

2011 - 2014

- Directed two apps (iOS): an E-greeting card creation/sharing app and a mobile game, optimizing user engagement and Elevated app ratings.

## Education

PhD. (Dr. rer. nat.)	Faculty of Information Systems & Applied Computer Science, Otto-Friedrich-Universität Bamberg, Germany	2023
Masters of Science	Faculty of Computer Science & Engineering, German University in Cairo, Egypt	2010
Bachelors of Science	Faculty of Computer Science & Engineering, German University in Cairo, Egypt	2009

## Skills

DEVELOPMENT	Python, Flask, WSGI, Apache, Docker, Linux CLI, git, and low-/no-code. Formerly, C++, Lisp, Java.
DATABASES	MongoDB, Neo4j, MySQL, Google Firebase Cloud, and Resource Description Framework (RDF) / Semantic Data.
DOMAIN EXPERTISE	Metadata, Data integration, governance, interoperability, standardization, cataloguing, domain modeling, robotics, AI.

## Publications

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2023	The Basin Network: A Model for Data Sharing & Exchange. <i>PhD Thesis</i>
2021	Data-Sharing Markets for Integrating IoT Data Processing Functionalities. <i>CCF Transactions on Pervasive Computing &amp; Interaction</i>
2018	Semantic Data Management for Experimental Manufacturing Technologies. <i>Datenbank-Spektrum</i>
2010	Focused Belief Revision as a Model of Fallible Relevance-Sensitive Perception. <i>Künstliche Intelligenz (KI)</i>
2010	High-Level Perception as Focused Belief Revision. <i>European Conference on Artificial Intelligence (ECAI)</i>

## Languages

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**English:** Fluent | **German:** B1 (Telc Certified)