

AMGAD MADKOUR

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PROFILE

Engineering leader with deep expertise in AI-powered consumer experiences and enterprise-scale platforms. Hands-on technical leader specializing in agentic AI systems, LLM-powered applications, knowledge graphs, and data platforms, with a proven track record of delivering 0→1 products, building high-performing engineering organizations, and driving cross-functional execution. Combines strategic leadership with active involvement in architecture, system design, and technical direction to deliver scalable platforms and measurable business impact for products serving millions of users.

EXPERIENCE

Microsoft AI, Commerce

Principal Engineering Manager

March 2022 – Present

Redmond, USA

- Own the Microsoft Copilot Commerce Savings platform and engineering organization, driving the strategy, architecture, and execution behind AI-powered savings scenarios serving millions of users across the Microsoft ecosystem.
- Founded and scaled the engineering organization responsible for Copilot Commerce Savings, building a high-performing multidisciplinary team spanning engineering and applied science while establishing the technical foundations, operating model, and execution culture.
- Directed the delivery of multiple 0→1 AI-powered commerce experiences including product tracking, price alerts, coupons, cashback, Autos Copilot, and My Garage, expanding Microsoft's commerce engagement and monetization opportunities.
- Led the integration of Commerce Savings capabilities into Microsoft Copilot through an agentic architecture that orchestrates multiple commerce tools and services, while establishing evaluation frameworks, quality metrics, and operational standards for reliability and user trust.
- Drove platform investments and organizational alignment that accelerated product tracking adoption by 2× within six months and enabled rapid feature expansion across commerce experiences.
- Partner with senior leaders across product, design, business, engineering, and research organizations to define long-term strategy, prioritize investments, and deliver cross-organizational initiatives.
- Provide technical leadership across architecture, platform evolution, and engineering excellence, guiding system design and execution while empowering senior engineers and technical leads to scale delivery.
- Built and developed the organization through hiring, mentorship, career development, succession planning, performance management, and promotion processes, creating a strong leadership pipeline and engineering culture.
- Led the engineering delivery of Autos Copilot and My Garage within Microsoft Autos Marketplace, contributing to 3× DAU growth and year-over-year revenue growth.

Microsoft Bing

Senior Data & Applied Scientist

January 2019 – March 2022

Redmond, USA

- Designed, developed, and fine-tuned ML models for product information extraction in Microsoft Edge, improving accuracy and production reliability at scale.
- Reduced compute and storage costs for entity matching workflows by 50% through optimized indexing and candidate generation.
- Scaled the Bing Satori knowledge graph entity matching platform on Apache Spark and pioneered adoption of .NET for Spark within the Bing stack.

IBM

Research Engineer

February 2006 – September 2010

Cairo, Egypt

- Developed (Bionoculars), an unsupervised biomedical information extraction system for identifying protein-protein interactions from scientific literature.
- Created a machine-assisted human translation system (MAHT) leveraging language models for statistical machine translation.
- Collaborated with researchers in IBM Watson Research lab to build an unstructured information management platform for knowledge discovery from news.

EDUCATION

Purdue University

Ph.D. in Computer Science

December 2018

PATENTS

Selecting a data element in a network, US Patent 8,589,409.

SELECTED PUBLICATIONS

WORQ: Workload-Driven RDF Query Processing. International Semantic Web Conference (ISWC), 2018.

SPARTI: Scalable RDF Data Management Using Query-Centric Semantic Partitioning. SIGMOD Workshop on Semantic Big Data (SBD@SIGMOD), 2018.

Tornado: A Distributed Spatio-Textual Stream Processing System. Proceedings of the VLDB Endowment (PVLDB), 2015.

Language Independent Transliteration Mining System Using Finite State Automata Framework. Named Entities Workshop (NEWS@ACL), 2010.

BioNoculars: Extracting Protein-Protein Interactions from Biomedical Text. BioNLP Workshop (BioNLP@ACL), 2007.

TECHNICAL SKILLS

AI/ML

LLMs, RAG, Agentic AI, LLM Evaluation, Knowledge Graphs

Leadership

Team building, hiring, mentoring, cross-functional execution