YAS FINDIK, PhD

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AI leader and researcher (PhD, Computer Science) with 10+ years of experience across pharmaceuticals and finance. Currently Associate Director, Global AI & Advanced Analytics at BioNTech, I lead GenAI strategy and execution planning, define modular capability stacks, and scale agentic workflows (RAG, stateful orchestration, multi-agent patterns) with governance-by-design for regulated environments. I combine hands-on technical depth with cross-functional leadership and vendor strategy to deliver production-ready GenAI solutions.

Experience

Associate Director, Global AI & Advanced Analytics – *BioNTech* – MA **Jul 2025 - Present**

- Drive an **enterprise GenAI roadmap** built on reusable capabilities, balancing near-term impact with long-term platform maturity, and aligning priorities across commercial, market access, and insights needs.
- Define and lead a **modular GenAI capability stack** (document intelligence, knowledge grounding, content transformation, orchestration, multi-agent patterns, governance), providing hands-on technical direction for scalable implementation with **LangChain** (RAG/tooling), **LangGraph** (stateful workflows), and **MCP** (standardized tool/data).
- Establish a **role-based GenAI operating model** (e.g., interpretation, planning, generation, review, validation) to standardize how GenAI is embedded into workflows and scaled across teams, including **A2A** collaboration patterns for specialized agent roles.
- **Lead cross-functional teams** across research and engineering while remaining hands-on in key technical areas (use-case scoping, evaluation design, workflow patterns) to accelerate delivery and ensure quality.
- Implement **governance-by-design** for regulated AI workflows, including quality benchmarks, validation loops, audit readiness, and phased delivery milestones to improve reliability and adoption.
- Lead **build-vs-buy decisions** and partner strategy, setting performance expectations and coordinating vendors to accelerate delivery while strengthening long-term internal ownership and scalability.
- Overall, lead the launch of **9 pharma commercial GenAI** use cases and oversee ongoing support for 6, driving enhancements, adoption, stakeholder feedback loops, and quality monitoring.

Postdoctoral Researcher – *Johnson & Johnson* – MA **Apr 2025 - Jul 2025**

- Implemented **Retrieval-Augmented Generation** to ground agent reasoning in external knowledge and support iterative, feedback-driven refinement across reasoning phases.
- Designed a **multi-agent generative AI system** in the biomedical domain, where agents with distinct motivations (e.g., curiosity, conservatism) collaboratively explore, generate, and critique outputs derived from natural language observations.

AI Researcher – *University of Massachusetts* – MA **Aug 2021 - Mar 2025**

- Leveraged **Large Language Models (LLMs**) with **RAG** in Multi-Agent RL to boost agent performance and encourage novel behaviors through inter-agent communication.
- Designed novel, relationship-aware algorithms that guide effective multi-agent collaboration by leveraging inter-agent relationships, outperforming state-of-the-art **deep re-**

inforcement learning architectures (DQN, A2C, DDPG, PPO).
- Designed and developed a new algorithm, D-CBRS, that effectively manages intra-class diversity in a continual learning setting, enabling models to retain knowledge while learning new tasks without significant performance loss.
- **Led a team** of three undergraduate and master's students, regularly reporting progress and findings to PIs, and publishing scientific results in peer-reviewed conferences.

AI & Data Science Summer Associate – *Novartis, Global Oncology* **Jun 2022 - Aug 2022**

- Led a **sentiment analysis** project that improved model performance by 25%, surpassing the team's previous benchmarks. **Fine-tuned a Bio-ClinicalBERT model on drug-related HCP notes**, effectively leveraging **transfer learning**.
- Built machine learning models for **marketing mix** analysis of panel data to estimate the impact of marketing activities on sales. Applied data normalization, adstock, and diminishing returns transformations, enhancing predictive accuracy and generating important business insights.
- Built and evaluated time-series forecasting models, presented results to senior executives, delivered two projects within a short timeframe demonstrating strong leadership and stakeholder management skills.

Sr. Machine Learning Engineer – *CicekSepeti* – Istanbul, Turkey **Jan 2020 - Aug 2021**

- **Led a team of three machine learning engineers and data scientists** in developing a product pricing framework and managing the Extract-Transform-Load (ETL) process to integrate data scraped from e-commerce sites.
- Implemented a scraper system within the framework, using *AWS* and *GCP* to optimize network access, and *Docker* containerization, with each container integrated with *Kafka* to efficiently manage data streams, ensuring consistent and scalable data collection.
- This framework empowered pricing specialists without ML expertise to train and manage advanced models (SVMs, CNNs, RNNs, LSTMs) and structural approaches (SARIMA, VAR) to develop optimal pricing strategies by leveraging market dynamics and trends.
- The developed framework, enhanced by integrating *Tableau*, empowered employees to compare product prices across e-commerce platforms using interactive visualizations.

Machine Learning Engineer – *Isbank* – Istanbul, Turkey **June 2018 - Dec 2019**

- Created and deployed an NLP task management and monitoring framework on Docker, designed specifically for chatbot development, enabling users to annotate data, train and test ML models, and configure APIs for querying trained models.
- The framework enabled training models using deep LSTM/GRU networks or custom similarity algorithm training, depending on the dataset scale.
- Built the backend using *Flask* (REST) with *Celery*, utilizing *MongoDB* for the database and *Solr* for logging, and replaced *Jinja2* templates with a *VueJS*-based API frontend.
- APIs for querying the trained models have been integrated into multiple applications, including Pepper, Isbank's mascot robot, for customer interactions in branches, the mobile app's chatbot, and by Isbank's internal investment teams.

Technical Skills

AI/ML & Analytics: Deep Learning, Transformers, GenAI, Retrieval-Augmented Generation, Reinforcement Learning, Multi-agent Systems, NLP, A/B testing, Forecasting, Statistical Modelling, Predictive Analysis, Tableau, PowerBI

Languages: Python, R, SQL, Java, C++, C#, C, PHP, CSS, HTML, Javascript, Matlab

Frameworks: PyTorch, Tensorflow, LangChain, LangGraph, MCP, A2A, Keras, Flask, OpenCV, OpenGL, D3, Android

Others: Databricks, AWS, GCP, Docker, Neo4j, Kafka, Solr, MongoDB, Git

Education

Ph.D. in Computer Science
University of Massachusetts — *Lowell, MA*

M.Sc. in Computer Science and Engineering
Sabanci University — *Istanbul, Turkey*

B.Sc. in Computer Engineering
Izmir Institute of Technology — *Izmir, Turkey*

Selected Publications

The complete collection of my peer-reviewed publications is available on Google Scholar.

[1] **Y. Findik**, R. Azadeh; "Coordinated Q-Functionals" In *proceeding 64rd IEEE Conference on Decision and Control (CDC)*, Rio de Janeiro, Brazil, Dec. 9-12, 2025. [pdf]

[2] **Y. Findik**, H. Hasenfus, R. Azadeh; "Collaborative Adaptation for Recovery from Unforeseen Malfunctions in Discrete and Continuous MARL Domains." In *proceeding 63rd IEEE Conference on Decision and Control (CDC)*, Milan, Italy, Dec. 16-19, 2024. [pdf]

[3] **Y. Findik**, P. Robinette, K. Jerath, R. Azadeh; "Impact of Relational Networks in Multi-Agent Learning: A Value-Based Factorization View." In *Proceeding 624rd IEEE Conference on Decision and Control (CDC)*, Marina Bay Sands, Singapore, Dec. 13-15, 2023. [pdf]

[4] **Y. Findik**, F. Pourkamali-Anaraki; "D-CBRS: Accounting for Intra-class Diversity in Continual Learning." In *Proceedings of the 29th IEEE International Conference on Image Processing (ICIP)*, Bordeaux, France, pp. 2531–2536, Oct. 16-19, 2022. [pdf]