YAS FINDIK, PhD(c)

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With 8+ years of experience, Yas specializes in building and deploying AI & Data Science solutions across different domains, including predictive models (anomaly detection, forecasting, marketing mix analysis) and generative models (LLMs, chatbots, reinforcement learning). Yas has successfully led several high-impact projects, and will complete a Ph.D. in Computer Science (February 2025) with a focus on LLMs with Retrieval Augmented Generation (RAG).

Experience

AI Researcher – *University of Massachusetts* – Lowell, MA **Aug 2021 - Present**

- Leveraging **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, extending and outperforming state-of-the-art **deep reinforcement learning** architectures (DQN, A2C, DDPG, PPO).
- Developed a new algorithm, D-CBRS, to effectively manage intra-class diversity in continual learning settings, enabling models to retain knowledge from previous tasks while learning new ones 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 solutions & Data Science Summer Associate – *Novartis* – NJ **Jun 2022 - Aug 2022**

- Led a **sentiment analysis** project that improved model performance by 25%, surpassing the team's previous benchmarks by **fine-tuning the 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 delivering important business insights.
- Built and evaluated time-series forecasting models, presented results to senior executives, and demonstrated leadership by delivering two projects within a short timeframe.

Sr. Machine Learning Engineer – *CicekSepeti* – Istanbul, Turkey **Feb 2020 - Jul 2021**

- **Led a team of three machine learning engineers** to develop a product pricing framework, 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 **Nov 2018 - Jul 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.

Research Assistant – *Behavioral Analytics and Visualization Lab* **Sept 2016 - Jul 2021**

- Built an intelligent agent to facilitate data-driven decision-making using techniques from visualization and computer vision, to natural language processing.
- Utilized data mining techniques to predict election protests using Twitter data.
- Designed a collaborative computer-aided table-top setup to facilitate design processes.

Technical Skills

AI/ML & Analytics: Deep Learning, Transformers, GenAI, Retrieval-Augmented Generation, 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, Keras, Flask, OpenCV, OpenGL, D3, Android
Others: AWS, GCP, Docker, Kafka, Solr, MongoDB, Git

Education

Ph.D. in Computer Science **Feb 2025 (Expected)**
University of Massachusetts Lowell *Lowell, MA*

M.Sc. in Computer Science and Engineering **Aug 2018**
Sabanci University *Istanbul, Turkey*

B.Sc. in Computer Engineering **Jun 2016**
Izmir Institute of Technology *Izmir, Turkey*

Selected Publications

The complete collection of my peer-reviewed publications can be found on Google Scholar.

[1] **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]

[2] **Y. Findik**, P. Robinette, K. Jerath, R. Azadeh; "Impact of Relational Networks in Multi-Agent Learning: A Value-Based Factorization View." In *Proceeding 62rd IEEE Conference on Decision and Control (CDC)*, Marina Bay Sands, Singapore, Dec. 13-15, 2023. [pdf]

[3] **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]

[4] **Y. Findik**, H.A. Boz, B. Bozkaya, S. Balcisoy; "Facilitating Decision Making with Multimodal Interfaces in Collaborative Analytical Sessions." In *Textbook of Intelligent Scene Modeling and Human-Computer Interaction, Human-Computer Interaction Series*, Springer, Cham, Jun. 2021. [pdf]

[5] **Y. Findik** and E. Yildiz; "Question Similarity Detection in Turkish Using Semantic Textual Similarity Methods." In *Proceeding 27th IEEE Signal Processing and Communications Applications Conference (SIU)*, Sivas, Turkey, pp. 1-4, Apr. 24-26, 2019. [pdf]