Eslem Karakaş

 eslem-karakas eslemkarakas eslem.karakas.tr@gmail.com 905457438945

Technical Skills

Languages: Go, Python, SQL
Practices: Scrum, Kanban, Waterfall
Domains: Retail, E-Commerce, Industry, Consultancy
Tools: Git, DVC, Docker, Kubernetes, Terraform, Jenkins, GitHub Actions, Apache Airflow, Azure Databricks, Amazon Web Services
Frameworks: Numpy, Pandas, Polars, PySpark, Ray, XGBoost, LightGBM, CatBoost, Scikit-Learn, PyTorch, FastAPI, MLflow
Concepts: Algorithms, Data Structures, System Design, Design Patterns, Software Testing, Machine Learning, Deep Learning, Large Language Models, Feature Engineering, MLOps, AI Explainability, Batch Prediction, Online Prediction, Distributed Training, Continuous Integration, Continuous Development, Agile Methodologies (Scrum, Kanban), Release Management, Cloud-Native Applications

Experience

invent.ai   January 2025 - Present
Machine Learning Engineer   *Istanbul, Turkey*

- Contributed to development of Retail Demand Forecasting product by designing and deploying machine learning solutions that power invent.ai' cloud-based retail analytics platform, enabling data-driven inventory and pricing strategies across global retail clients.
- Developed Python libraries for scalable machine learning pipelines, covering data ingestion, feature engineering, model training, validation, and deployment, designed to operate efficiently in distributed PySpark environments.
- Conducted R&D on advanced time-series forecasting techniques such as data drifting, probabilistic forecasting, hierarchical reconciliation, ensemble tree-based and deep learning methods to enhance predictive accuracy, computational efficiency, and scalability in high-volume retail data settings.

Practice: Scrum
Domain: Retail, E-commerce
Languages: Python
Frameworks: PySpark, XGBoost, LightGBM, MLflow
Infrastructure: Azure Blog Storage, Azure Databricks, Terraform, Apache Airflow, Datadog, Kubernetes, Jenkins, GitHub Actions

BSH Home Appliances Group   August 2022 - December 2024
Data Scientist   *Istanbul, Turkey*

- Led a cross-functional team in the data science domain, introducing new tooling to be usable on MLOps infrastructure and establishing principles that keep developers on track from development to production by assessing whether developers obey the rules with automated CI pipelines, resulting in a steady stream of projects and enhanced client satisfaction.
- Implemented state-of-the-art machine learning and deep learning algorithms through paper-to-code translation while developing high-performant unified batch and streaming pipelines to make it usable by analytical applications and building robust MLOps frameworks to ensure scalable and efficient model deployment.
- Developed several predictive maintenance solutions under a user-interacted platform to detect potential errors in machinery data coming from the IoT data pipeline using technologies like Apache Kafka, S3, and Redshift, driving a 10% reduction in maintenance costs.
- Collaborated with enterprise architects to develop a roadmap and establish reliable architectural patterns for integration strategies and infrastructure security, focusing on vendor-managed applications and their specific application topology and requirements.

Practice: Kanban
Domain: Industry
Languages: Python, SQL
Frameworks: NumPy, Pandas, Polars, XGBoost, LightGBM, PyTorch, MLflow
Infrastructure: IoT Gateway, Apache Kafka, AWS S3, AWS Redshift, AWS DynamoDB, AWS Lambda, AWS EC2, AWS Cognito, GitHub Actions

AI Business School   May 2021 - July 2022

AI Research Intern   *Freienbach, Switzerland*

- Played a significant role in preparing business-oriented AI courses about retail, banking, healthcare, and mobility sectors, which grew revenue in Germany and Switzerland marketplaces by 100,000 CHF.

Practice: Waterfall

Domain: Consultancy

Global AI Hub   June 2020 - April 2021

AI Research Intern   *Freienbach, Switzerland*

- Assisted in preparing the coding practices and data science course content for a non-profit and socially impactful initiative aimed at providing free education to 10 million individuals on topics such as AI, robotics, and data science.

Practice: Waterfall

Domain: Consultancy

Projects

DocBot | *Python, Docker, Slack, S3, Lambda, OpenAI, GitHub Actions*   **2025**

- Developed an LLM-powered chatbot that allows internal teams to query the codebase directly on Slack channel when using our product, reducing developer support requests and saving engineering teams significant time.
- Orchestrated a bunch of AWS Lambda functions, listening to Slack channels, automatically generating documentation on new releases, and answering questions in a fully serverless manner.

LineGuard | *Python, Docker, FastAPI, GitHub Actions, Fargate, Lambda, Cognito, Redshift, DynamoDB*   **2024**

- Built a self-service predictive maintenance solution that allows factory users to create AI models by automatically specifying the best-fit preprocessing and modeling techniques without technical knowledge with a user-friendly and open-ended platform.
- Developed a cost-efficient MLOps framework from scratch, featuring a retraining system, user authentication and registration, experiment tracking, and model management, offering a more affordable alternative to remote-hosted MLflow service.

FaultPrognosis | *Python, MLflow*   **2024**

- Developed a time-series forecasting model utilizing XGBoost algorithm, with MLOps integration for model tracking and management, while incorporating AI explainability techniques to ensure transparency in forecasting outcomes.

PatternForge | *Python, Docker, Apache Kafka, S3, Redshift, Lambda, Fargate*   **2023**

- Transformed an unsupervised problem into a supervised one using a rule-based labeling approach on big data to develop an ML solution for detecting errors in refrigerator tests and informing operators via Power BI dashboard and nominated for IDC Cooling Awards by BSH.
- Performed hybrid cloud migration for on-prem BSH SQL DB with a robust and secure data pipeline for analytical applications, doubling the performance compared to the previous system.

BakeSpectra | *Python, Streamlit, FastAPI*   **2023**

- Enabled users to upload baked product images and create customized SVM models based on computed color distributions, all accessible through a user-friendly web application for streamlined future quality evaluations.

LeakTrack | *Python, Docker, PyTorch, Fargate, Redshift, EventBridge*   **2022**

- Built an autoencoder model that retrains itself regularly on cloud service to inform line operators about air leaks in machines, and rolled out all BSH factories as a global product, leading to a 10% decrease in unplanned downtime.

Certifications

AWS Certified Solutions Architect   **2025**

Awards

Data Visualisation Tournament - 1st | *Bisoft*   **2020**

- Prepared an interactive dashboard using a BI tool to visualize key performance indicators and business metrics and was awarded first place among 150 industry employees by the jury's choice.

Education

Gazi University   **September 2018 - June 2023**
Bachelor of Science in Electrical and Electronic Engineering, Faculty of Engineering   *Ankara, Turkey*
- **University Entrance Exam:** 29,992th/2,381,412
- **Clubs and Societies:** Board Member, IEEE Student Branch; Road Cyclist, University Cycling Team
- **Relevant Coursework:** Algorithms, Data Structures, Computer Networks, Circuit Theory, Analog Electronics, Signal and Systems, Control Systems, Digital Signal Processing