

M. Erdi ARI

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RESEARCH EXPERIENCE & PUBLICATIONS

Publications

VBART: The Turkish LLM, (<https://arxiv.org/abs/2403.01308>)

VNLP: Turkish NLP Package, (<https://arxiv.org/abs/2403.01309>)

Ahşapta İç Kusurların Tespiti..., (www.researchgate.net/...)

RESEARCH INTERESTS

- Large Language Model Training and Optimization
- Multilingual Natural Language Processing
- Efficient AI Systems and Model Compression
- Graph-based Information Retrieval
- Turkish Language AI Development
- Generative AI and Video Synthesis

WORK EXPERIENCE

AI Research Engineer

Oct 2022 — Present

VNGRS

Remote

Research Projects & Contributions:

- **LLM Training & Optimization:** Executed end-to-end training of large language models, including data preparation, model architecture optimization, and performance tuning. Published VBART, a Turkish LLM addressing multilingual AI challenges. Working on a semi-large language model (7B-2B in turkish)
- **Graph-based RAG Systems:** Researched and implemented novel Retrieval-Augmented Generation architectures using graph structures to enhance context understanding and information retrieval efficiency
- **Multilingual NLP Research:** Developed VNLP, an open-source Turkish NLP package, contributing to the advancement of non-English language processing capabilities
- **Real-Time AI Systems:** Designed efficient transcription systems focusing on real-time performance optimization and scalability challenges
- **Specialized Data Science:** Pioneered methods for curating and refining datasets for model fine-tuning, contributing to improved AI model performance for targeted applications

TECHNICAL SKILLS & RESEARCH EXPERTISE

- **ML Research & Development:** PyTorch, TensorFlow, JAX, Hugging Face Transformers, Large Language Model Training, Hyperparameter Optimization, Transfer Learning, Fine-tuning
- **Research Areas:** Natural Language Processing, Multilingual AI, Graph-based Systems, Generative AI, Model Efficiency, AI Safety, Retrieval-Augmented Generation, Video Generation
- **Open Source Contributions:** Worked on VNLP package, VBART model, active contributor to ML research community
- **Engineering & Systems:** Python, UNIX/Linux, AWS (EC2, S3, SageMaker), Docker, Kubernetes, Git, CI/CD, Performance Optimization, Distributed Computing
- **Research Tools:** NumPy, Pandas, Matplotlib, Seaborn, Plotly, ONNX, Langchain, Scientific Computing, Data Curation, Statistical Analysis

EDUCATION & CERTIFICATIONS

İstanbul Technical University

Maslak, İstanbul

Physics Engineering

- Relevant Coursework: Python, Fortran, Statistical Learning From Data and General Mathematics

Getting Started with Deep Learning, NVIDIA

29 June 2022 [Verify](#)