Burakhan Şamlı

Forensic Informatics Engineer | AI, Computer Vision, NLP & MLOps

AI Specialist with a background in Forensic Informatics Engineering, specializing in computer vision, NLP, and remote sensing-based AI systems. Experienced in developing end-to-end, scalable AI solutions including biometric identification, object detection and tracking, multi-camera video analytics, and satellite image analysis for real-world applications. Strong hands-on experience with Transformer-based architectures across vision and language domains, as well as deploying AI models in production using containerized and microservice-based architectures with Docker and Kubernetes.

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Burakhan Şamlı | github.com/blitzkrieg0000 | https://blitzkrieg0000.github.io/

WORK EXPERIENCE

Hexaops A.Ş.

Teknokent, Kahramanmaraş

NLP & Transformer Architectures — 10/2024 - 05/2025

- Participated in NLP projects, working on system design and planning with technologies involving translation, chatbots, messaging, and distributed systems; additionally contributed to the training and fine-tuning of large language models, as well as voice cloning, TTS, and STT projects.

DGH Arge Yazılım

ASBÜ Teknokent, Ankara

Remote Sensing & GIS — 06/2023 - 10/2024

- Experience in satellite image analysis and GIS-based workflows using multispectral and hyperspectral data.
- Application of remote sensing techniques to agriculture-oriented projects, including Land Use and Land Cover (LULC) analysis.
- Hands-on experience with platforms and tools such as Sentinel, Landsat, Google Earth Engine, ArcGIS Pro, and EU Copernicus datasets.
- Applied knowledge of satellite image preprocessing, analysis, and interpretation for real-world GIS applications.

NLP & Transformer Architectures — 10/2023 - 08/2024

Computer Vision Projects

- Practical experience with Transformer-based architectures across both computer vision and natural language processing domains.
- Exposure to text-based analysis, feature representation, and modern deep learning workflows aligned with current advances in Transformer models.

Specialized Research & Advanced Systems — 09/2022 - 10/2023

- Web application development using ASP.NET Core, with a focus on backend-oriented system design.
- Remote sensing research for environmental and agricultural use cases.
- Real-time sports performance analysis (motion & posture).
- AI training on Huawei Atlas 800 (NPU acceleration).

DGH Arge Yazılım

İnönü Teknokent, Malatya

AI & Computer Vision — 02/2022 - 02/2023

- Experience in developing AI-based image processing and computer vision applications, including OpenCV-based systems, OCR, image segmentation, object detection and tracking, and dataset preparation and labeling.
- Hands-on work with GAN and Transformer-based image enhancement techniques, including super-resolution and representation learning approaches.
- Development and deployment of real-time AI systems, such as quality control solutions, face recognition and identification platforms, and infrastructure inspection projects, including high-voltage transmission line fault detection.
- Deep learning model development primarily using PyTorch, with experience in inference and serving frameworks such as Triton Inference Server and TorchServe.

Software Engineering & Deployment — 08/2021 - 06/2022

- AI backend development with Python FastAPI and NVIDIA Triton.
- Design and implementation of microservice-based architectures for scalable software systems.
- Experience with Docker, Kubernetes, and Proxmox.
- CI/CD pipelines using GitHub Actions, GHCR, ArgoCD, and Ansible.
- Real-time data processing with Kafka, Redis, and RTMP.
- Monitoring with Prometheus and Grafana.

Forensic Informatics Engineering Intern - I

07/2021 - 08/2021

DGH Arge Yazılım — *İnönü Teknokent, Malatya*

- Participation in AI-based software development and real-time web integration projects.

Forensic Informatics Engineering Intern - II

07/2020 - 08/2020

Telehouse İstanbul - Teknotel — *Kozyatağı, Kadıköy/İstanbul*

- Web application development and network-IT management were carried out.

PROJECTS

LULC Analysis & Remote Sensing

- Performed land use and land cover (LULC) segmentation using multispectral Sentinel-2 and Landsat satellite imagery.
- Generated composite datasets and conducted geospatial analysis to calculate area distribution of land cover classes using ArcGIS Pro and QGIS.
- Built data collection and processing pipelines for LULC analysis using Google Earth Engine APIs and Copernicus datasets.
- Retrieved and processed map tiles via web-based geospatial protocols to support scalable spatial analysis workflows.
- Produced digital elevation models (DEM) from radar data using InSAR-based techniques for terrain analysis.

Fault Detection Project

- Developed a computer vision-based system for detection and segmentation of high-voltage power lines and poles using deep learning models.
- Designed and implemented fault detection pipelines for high-voltage line insulators, improving infrastructure monitoring and outage prevention.
- Built bird nest detection models on high-voltage transmission lines using object detection techniques to support proactive maintenance.

Multi-Camera AI-Based Security & Surveillance System

- Developed an integrated computer vision system combining face detection, recognition, tracking, and person re-identification for identity-based surveillance applications.
- Integrated additional AI modules including mask detection (COVID-19), emotion recognition, and weapon detection to enhance security monitoring capabilities.
- Designed the system to operate across multiple camera streams with real-time video processing and event-based analytics.
- Architected a microservice-based backend and deployed AI services using Docker and Kubernetes for scalable and fault-tolerant operation.
- Built backend APIs to manage video streams, inference services, and system coordination across distributed components.

Real-Time Tennis Performance Analysis System

- Developed a real-time computer vision system for tennis ball detection, tracking, and bounce point estimation to support ITN (International Tennis Number) performance evaluation.
- Implemented player detection and tracking pipelines to analyze shot events and score player actions during gameplay.
- Designed multi-camera alignment and synchronization mechanisms to fuse ball trajectories across multiple viewpoints.
- Applied human pose estimation techniques to analyze player movements and assess performance progression based on body posture and motion patterns.
- Built low-latency processing workflows to enable real-time feedback in sports performance analysis systems.

Blockchain Data Protection

- Designed a blockchain-based system to ensure immutability and consistency of data processing pipelines.

TECHNICAL SKILLS

PROGRAMMING & CORE

Python | C# | Linux | Git | Sockets

MACHINE LEARNING / DEEP LEARNING

PyTorch | TensorFlow | Transformers | Scikit-Learn | Onnx-Runtime | DeepSpeed | FairScale

COMPUTER VISION & IMAGING

OpenCV | Mediapipe | Rastervision | GEE

NLP & LLM ECOSYSTEM

LangChain | Unsloth | LLMA

DEVOPS / MLOPS

Docker | Kubernetes | Terraform | GitHub Workflows | ArgoCD | Ansible | Prometheus | Grafana

DISTRIBUTED SYSTEMS

Confluent Kafka | gRPC | Protobuf | Rook-Ceph | Apache Spark | Ray

WEB FRAMEWORKS & APIS

ASP.NET Core | FastAPI | Flask | Angular

DATA & DATABASES

Pandas | Numpy | Cassandra | PostgreSQL | Redis | Milvus | Qdrant | Firebase | Copernicus

VISUALIZATION

Matplotlib | Seaborn | Plotly

GIS & REMOTE SENSING TOOLS

ESRI ArcGIS Pro | QGIS

EDUCATION

Fırat University

Bachelor of Science in Forensic Informatics Engineering

GNO: 3.73 / 4 — 2017 - 2022

LANGUAGE

English — *Professional Working Proficiency*

Turkish — *Native*