Adem USTA

Senior Software Engineer | ML/MLOps Specialist

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Paris, France
31 years old, French

Work experiences

Oct. 2024
Now

Staff MLOPS Engineer (Employee) @ Integral Ad Science

Development and maintenance of the Total Media Quality (TMQ) solution: a real-time data processing pipeline for online advertising.

- Familiarized with the existing deployment stack and mechanisms for generating and deploying Machine Learning models
- Identified bottlenecks (GPU computations) and isolated them into a dedicated service
- Designed a 'model serving'-oriented architecture to optimize GPU resource scaling
- Implemented a 'model serving' service based on Nvidia Triton
- Aligned CI/CD with IAS deployment constraints and set up functional/integration tests
- Improved observability and monitoring using Prometheus and Grafana
- Proposed alerting solution for performance and latency anomalies using Grafana Alerting

Docker • Docker Compose • Kubernetes • AWS • Jenkins • Python • FastAPI • PyTorch • Nvidia Triton • TensorFlow • Databricks • PostgreSQL • Kafka • MLFlow • Prometheus • Grafana

May 2024
July 2024

Full Stack Engineer - Web Application (Freelance) @ Ondorse

Development and maintenance of the Ondorse service: the KYB (Know Your Business) SaaS for companies.

- Familiarized with the tool and existing codebase for KYB compliance services
- Added new validation steps for enhanced business verification processes
- Implemented comprehensive UI features for improved user experience
- Applied Clean Architecture principles and Test Driven Development practices

Docker Compose • Docker • Python • FastAPI • PostgreSQL • Alembic • React • TypeScript • Chakra UI • TanStack • Celery • Clean Architecture • TDD

Oct. 2023
April 2024

Full Stack Engineer - Mobile (Freelance) @ FoxIntelligence (NielsenIQ)

Development of a mobile receipt collection application: ScanRewards.

- Took over foundations of existing mobile application developed by founders
- Added receipt scanning features using phone camera with OCR technology
- Created comprehensive image processing pipeline to extract receipt information
- Integrated loyalty system for user engagement and retention
- Successfully deployed mobile application to Apple and Android app stores
- Developed back office system for managing users and scanned receipts
- Implemented usage tracking and user feedback systems for continuous improvement

Docker • PHP • MySQL • HTML • CSS • Vanilla JavaScript • Mobile Development • OCR • Image Processing

Senior Backend Engineer (Freelance) @ AnotherBrain

Nov. 2022
March 2023

Within the 'Business Unit' team, worked on several topics around the 'Phosphor Quality' solution.

- Configured and deployed complete monitoring stack (Exporters, Prometheus, Grafana, AlertManager)
- Designed data retention and long-term storage solution for production metrics
- Created Python3.x service template with multiple targets and smooth development experience using Dev Containers
- Implemented fully functional code quality checkers suite (isort, black, pylint, mypy)
- Advanced usage of poetry for dependency management and project configuration
- Optimized multi-stage containerization with Docker for efficient deployments
- Set up PoC for 'CrystalClear' quality control solution with docker services architecture

> Python • Poetry • Docker • Docker Compose • Edge Computing • FastAPI • Prometheus • Grafana • Dev Containers • Code Quality Tools

Senior Software Engineer (Freelance) @ Context

Sept. 2022
Oct. 2022

Tests around the Python Ray framework for integration in Context SaaS video stream ingestion service.

- Studied Ray framework documentation and components for distributed computing
- Set up local development environment for Ray with GPU optimization
- Implemented video ingestion pipeline using Ray tasks and actors for scalability
- Integrated code quality tools: pylint, mypy for linting and type checking
- Set up pre-commit hooks for automatic code formatting using black
- Configured GitHub Actions for automated code quality checks
- Successfully migrated existing services to poetry for improved dependency management

> MLOps • Ray Framework • TensorFlow • PyTorch • Python • Poetry • GitHub Actions • Video Streaming • Docker • AWS • Kubernetes • FastAPI • Code Quality

Software Engineer (Employee) @ Boxy (ex Storelift)

Feb. 2021
July 2022

Within the 'Store-AI' team, design and improvement of applications for the 'Boxy' store: a fully autonomous connected store.

- Upgraded existing applications with real-time event tracking for customer behavior monitoring
- Implemented comprehensive logging and reporting functionality for business intelligence
- Integrated temperature sensors and developed IoT application for cloud-based temperature monitoring
- Designed and planned new microservices architecture for Boxy v2 with industry-standard practices
- Selected and integrated robust technologies to support scalable autonomous store operations
- Established comprehensive code quality procedures: linting, formatting, unit testing, and static type checking
- Automated quality checks using GitLab CI/CD pipelines and Git-Hooks for continuous integration

> GitLab • Git Hooks • CI/CD • IoT • Python • Kubernetes • Fluentd • Kibana • REST API • Arduino • Raspberry Pi • USB Serial • Prometheus • Grafana • RabbitMQ • Microservices • MQTT • Clean Code • PyTest • Pylint • Yapf • MyPy

Software Engineer (Employee) @ Context

March 2017
Feb. 2021

Design and development of software solutions around real-time video analysis using deep learning algorithms.

- Created comprehensive internal tool for managing databases of images and videos with user-friendly interface
- Implemented efficient database system for media file storage, retrieval, and metadata management
- Upgraded annotation tools with modern technologies and established code review processes
- Designed and built robust REST API for video upload and analysis with celebrity, logo, and object detection
- Implemented API versioning and blue-green deployment strategies for zero-downtime updates
- Developed client dashboard with advanced data visualization for video analytics and statistics
- Established comprehensive testing framework with PyTest for API and Jest for frontend
- Refactored core 'Compute' service for deep learning model loading and video processing
- Successfully transitioned to microservices architecture with Kafka messaging for inter-service communication
- Deployed scalable solution on Kubernetes cluster with appropriate addons for production workloads

> Docker Compose • Jenkins • MLOps • PyTorch • Docker • Python • AWS • REST API • TypeScript • Kubernetes • Angular • Django • PostgreSQL • React • Redux • FastAPI • Lambda • EC2 • PyTest • Jest • Kafka • Deep Learning • Computer Vision • Microservices

My education

June 2016

Master 2 @ Pierre and Marie Curie University (Paris VI)

Image and Sound for Intelligent Systems - With Honors

Haptics - Sense perception, haptic systems
Virtual Reality - Virtual environment design, physics management, HCI
Pattern Recognition - Coding chain, regression, neural networks, SVM
Image Processing - Image descriptors, motion detection and tracking
Sound Processing - SF model, LPC, noise suppression, source localization
Artificial Intelligence - Agents, state space search algorithms, planning

June 2015

Master 1 @ Pierre and Marie Curie University (Paris VI)

Robotics Engineering and Intelligent Systems - With High Honors

Microcontrollers - Real-time programming, Timers, GPIO, interrupts, PWM
Random Signals - Random processes, filtering and spectral analysis, detection
Information Processing - Coding chain, source and channel coding, encryption
Signal Processing - Fourier series and transforms, Laplace transform
C++ Programming - OOP basics, standard and third-party libraries
Robotics - Mechanism modeling, kinematics and dynamics, control laws

My skills

Backend Development & APIs

Expertise in crafting robust, scalable REST APIs and microservices using modern Python frameworks, with focus on performance optimization and clean architecture patterns.

Python 3.9+, FastAPI, Django, Flask, Pydantic, SQLAlchemy, Alembic, Celery, Redis, REST APIs, GraphQL, Microservices, Clean Architecture, Domain-Driven Design, Test-Driven Development, API Versioning, OpenAPI/Swagger

Frontend Development & User Experience

Proficient in building responsive, intuitive web applications with modern JavaScript frameworks, ensuring optimal user experiences across devices and platforms.

JavaScript ES6+, TypeScript, React 18, Next.js, Vue.js, Angular, Redux, Zustand, TanStack Query, Chakra UI, Tailwind CSS, PostCSS, Vite, Webpack, Jest, Cypress, Responsive Design, Progressive Web Apps

Database Design & Management

Comprehensive expertise in both SQL and NoSQL databases, specializing in schema design, query optimization, data migrations, and ensuring data integrity at scale.

PostgreSQL, MySQL, SQLite, MongoDB, DynamoDB, Redis, InfluxDB, Database Design, Query Optimization, Indexing Strategies, Data Migrations, Backup & Recovery, Replication, Sharding, ACID Properties, CAP Theorem

Machine Learning & AI

Skilled in end-to-end ML pipeline development, from data preprocessing to model deployment, with expertise in deep learning, computer vision, NLP, and MLOps practices.

Python, PyTorch, TensorFlow, Keras, scikit-learn, OpenCV, Pandas, NumPy, Jupyter, MLflow, Weights & Biases, Computer Vision, Natural Language Processing, Deep Learning, Neural Networks, CNN, RNN, Transformers, Model Deployment, A/B Testing

DevOps & Cloud Infrastructure

Extensive experience with cloud platforms, containerization, and CI/CD pipelines, enabling efficient development workflows and reliable production deployments.

Docker, Kubernetes, AWS, Google Cloud, Azure, Jenkins, GitHub Actions, GitLab CI, Terraform, Ansible, Prometheus, Grafana, ELK Stack, Nginx, Apache, Load Balancing, Auto Scaling, Infrastructure as Code, Monitoring & Alerting

Software Quality & Best Practices

Commitment to writing clean, maintainable, and scalable code following industry best practices, with emphasis on testing, code reviews, and continuous improvement.

Clean Code, SOLID Principles, Design Patterns, Test-Driven Development, Behavior-Driven Development, Code Reviews, Static Analysis, PyTest, Jest, Selenium, Unit Testing, Integration Testing, E2E Testing, Performance Testing, Security Testing, Refactoring, Technical Debt Management

Communication & Project Management

Multilingual professional with strong communication skills and experience in agile methodologies, capable of leading technical teams and collaborating with stakeholders.

> French (Native), English (Fluent), Turkish (Fluent), Agile/Scrum, Kanban, Jira, Confluence, Technical Writing, Code Documentation, Team Leadership, Mentoring, Stakeholder Communication, Project Planning, Risk Management

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