

Mariia M.

Middle AI/ML Engineer / Back-End Developer

SUMMARY

- AI/ML Engineer with 3.5 years of experience specializing in Python, FastAPI, PyTorch, TensorFlow, and OpenCV for developing real-time AI solutions including video avatars, hotel monitoring, and social media automation.
- Proficient in asynchronous programming, API integration, CI/CD pipelines (GitHub Actions), and cloud deployment on AWS, ensuring scalable and efficient back-end systems.
- Expertise in LLM prompt chain algorithms, multi-source data scraping, and AI-driven analytics for business intelligence and sales optimization.
- Holds a Bachelor's degree in Computer Science and certified in Practical Deep Learning with PyTorch and SQL for Data Science

TECHNICAL SKILLS

|                                              |                                                                                                                                                                                |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Main Technical Skills                        | Python (3 yr.), FastAPI (3 yr.), SQLAlchemy (2 yr.), Docker (2 yr.), Redis (1 yr.)                                                                                             |
| AI Tools & Assistants                        | Claude (1 yr.)                                                                                                                                                                 |
| Programming Languages                        | Python (3 yr.)                                                                                                                                                                 |
| Python Libraries and Tools                   | aiohttp, Alembic (2 yr.), AsyncIO (1 yr.), Matplotlib, NumPy, Pillow, poetry (1 yr.), PyTesseract, pytest, Scikit-learn, Streamlit                                             |
| AI & Machine Learning                        | Claude (1 yr.), ElevenLabs (1 yr.), Faiss (1 yr.), LangChain (1 yr.), LangGraph, LlamaIndex, n8n, NumPy, OpenAI (2 yr.), PandasAI, Scikit-learn, Whisper (1 yr.), YOLO (1 yr.) |
| Python Frameworks                            | FastAPI (3 yr.), Starlette                                                                                                                                                     |
| Data Analysis and Visualization Technologies | PandasAI                                                                                                                                                                       |
| Databases & Management Systems / ORM         | MySQL, PostgreSQL, Redis (1 yr.), SQLAlchemy (2 yr.)                                                                                                                           |
| Cloud Platforms, Services & Computing        | AWS (2 yr.)                                                                                                                                                                    |
| Industry Domain Experience                   | e-commerce (1 yr.)                                                                                                                                                             |
| Message/Queue/Task Brokers                   | Celery (1 yr.)                                                                                                                                                                 |

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|-----------------------------------------------------|--------------------------------------------------------------------|
| <b>Virtualization, Containers and Orchestration</b> | Docker (2 yr.)                                                     |
| <b>SDK / API and Integrations</b>                   | FastAPI (3 yr.), Google API, Python Requests Library, Telegram API |
| <b>Version Control</b>                              | Git, Github Actions                                                |
| <b>Deployment, CI/CD &amp; Administration</b>       | GitLab CI                                                          |
| <b>UI/UX/Wireframing</b>                            | Microsoft Visio (1 yr.)                                            |
| <b>QA, Test Automation, Security</b>                | Mock, Postman, pytest, Selenium, Unit Testing                      |
| <b>Web/App Servers, Middleware</b>                  | Nginx (1 yr.)                                                      |
| <b>Third Party Tools / IDEs / SDK / Services</b>    | PyCharm, Visual Studio                                             |
| <b>Methodologies, Paradigms and Patterns</b>        | UML (1 yr.)                                                        |
| <b>Other Technical Skills</b>                       | Logger (1 yr.), Stable Diffusion (1 yr.)                           |

## WORK EXPERIENCE

### AI/ML Engineer (Interactive Real-Time Video Avatar with Lip-Sync)

**Duration:** 0.5 years

**Summary:**

- Built an AI-powered real-time video avatar capable of natural interaction with users, featuring precise lip-sync aligned to generated or user-provided speech
- The system combined face animation models, audio-to-visual synchronization, and dynamic response generation, enabling the avatar to hold live, human-like conversations
- Integrated speech synthesis, real-time rendering, and dialogue management to deliver smooth and responsive user experiences

**Responsibilities:**

- Developed a live animated video avatar supporting real-time interactions with accurate lip-sync;
- Integrated audio-driven facial animation models to map phonemes to mouth shapes and facial expressions;
- Designed and implemented a custom LiveKit plugin to integrate the internal avatar worker into the LiveKit ecosystem and enable seamless interoperability with LiveKit voice agents;
- Built real-time communication pipelines between the avatar worker and LiveKit rooms, including synchronized audio streaming, session orchestration, and avatar state management;
- Built APIs and orchestration logic to manage conversations, avatar states, and user context.



**Technologies:** Python, FastAPI, PyTorch, OpenCV, Livekit, SyncTalk, InfiniTalk, RunPod, Librosa, aiortc, ElevenLabs, Groq, WebRTC, FFMPEG, Docker, GPU acceleration

## AI Developer (AI-Based Buying Committee Detection System)

**Duration:** 1 year

### Summary:

- The project aimed to identify the Buying Committee within a company's contact base using AI
- The system provides a complete toolset to achieve this goal, including PDF parsing and AI-driven analysis to generate detailed company profiles
- It integrates a scraping system that aggregates data from multiple sources via API requests
- The core functionality involves finding the Buying Committee through a custom algorithm built on LLM prompt chains, followed by result validation
- Additionally, the system offers analytics and visualizations for users in the form of interactive charts

### Responsibilities:

- Designing an AI algorithm based on LLM prompt chains;
- Parsing and validating LLM responses;
- Integrating multiple data scrapers using API requests;
- Building a unified scraping system with contact validation;
- Developing an algorithm for analyzing parsed PDF documents.

**Technologies:** FastAPI, SQLAlchemy, Alembic, Docker, LangChain, OpenAI, Google GenAI, Pydantic, LangSmith, RapidAPI, Apify, AWS, PyMuPDF, asyncio

## AI Engineer (Computer Vision System for Hotel Monitoring)

**Duration:** 1 year

### Summary:

- Developed an AI-powered hotel monitoring system based on surveillance cameras
- The system detects people in a video stream, tracks their movements, identifies individuals, and performs re-identification to recognize the same person even when appearing in different camera views
- It also collected and processed data to generate analytics about guest movement across different hotel zones, helping automate monitoring, track visitor flows, and improve space management and hotel security

### Responsibilities:

- Training OSNet model for person re-identification;
- Collecting and cleaning datasets for training;
- Developing an algorithm based on YOLO, OSNet, and DeepSORT for people monitoring;
- Configuring Docker for real-time streaming;
- Implementing logging and analytics system.

**Technologies:** OpenCV, PyTorch, Torchreid, OSNet, YOLO, DeepSORT, Logger, Torchvision, FAISS



## Back-End/AI Developer (AI Social media automatization)

**Duration:** 1 year

### Summary:

- Automatization of clean video creation (full and shorts for social media) and translation using AI
- The user provides a raw video and a text script containing time markers of the chapters, blooped cuts, camera changes, etc
- This video is cleaned automatically
- Video is translated into specified foreign languages using AI speech-to-text and text-to-speech technologies
- As a result, clean videos in all the needed languages are rendered

### Responsibilities:

- Back-end development;
- Back-end logic for video upload;
- OpenAI integration;
- Prompt engineering;
- ElevenLabs integration;
- DALL-E / Stable Diffusion image generation;
- Testing;
- Error Handling.

**Technologies:** Python, FastAPI, SQLAlchemy, Pydantic, OpenAI, Anthropic API, ElevenLabs, DALL-E, Stable Diffusion, Whisper, Nginx, Alembic, Redis, Celery, Poetry

## EDUCATION

- **Bachelor's degree in Computer Science**  
National Technical University of Ukraine 'Kyiv Polytechnic Institute'

## CERTIFICATION

- **DATA SCIENCE FUNDAMENTALS**  
DataRoot Labs
- **Practical Deep Learning with PyTorch**  
DataRoot Labs
- **Introduction to Databases for Back-End Development**  
Meta
- **SQL for Data Science**  
University of California, Davis

