

# Mesherykou Yahor

## Python Backend / MLOps engineer

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### Summary

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- Python backend engineer (3 yrs) with hands-on **ML and production-inference depth**. Build async microservices on FastAPI/Litestar, asyncpg, Kafka, Kubernetes for real-time and resource-constrained environments.
- Engineered the fleet backend running on **300+ Jetson edge devices** (8 microservices per device under hard RAM limits) and bootstrapped an 8-machine compute cluster.
- Own the **MLOps loop end-to-end**: model registry, walk-forward validation, monthly ensemble rotation, production inference, ~0.6 TB/mo of versioned artifacts (PyTorch, ClearML).
- Accelerated backtesting **280x** by rewriting hot paths in **Rust via PyO3**.
- **DDD, Ports & Adapters** practitioner, author of dddguard and snitchbot. Fluent with **agentic AI development** (Claude Code, Codex, Kimi).

### Skills

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#### Python

async/await, multiprocessing, threading, asyncio, dataclasses; uv, ruff, pytest, mypy

#### Data & Streaming

PostgreSQL, MongoDB, Redis, DuckDB, Kafka, MQTT, Parquet, Hive

#### Real-time / Media

WebRTC (aiortc), Socket.IO

#### Rust

PyO3, performance-critical hot paths

#### UI / Prototyping

Dash, Plotly, Reflex, HTMX, Jinja

#### Backend & APIs

FastAPI, Litestar, SQLAlchemy 2.0, asyncpg, Pydantic, dishka, msgpack, yoyo

#### Infrastructure & DevOps

Docker, Kubernetes (Python k8s SDK), GitHub Actions, ArgoCD, AWS (ECR, EKS, CloudWatch), Linux, rsync

#### MLOps & ML

PyTorch, ClearML, model registry, walk-forward validation, drift monitoring, ensemble rotation, Rainbow DQN

#### Observability

structlog, Datadog, Sentry, snitchbot

### Professional Experience

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#### Softarex Technologies Inc

2025 – Present

##### *Real-time analytics platform*

- Designed and built the platform's core backend: training-data prep, backtesting, Dash analytics/clustering dashboards, and the full retrain → rollout pipeline.
- Accelerated backtesting **280x** by rewriting hot pandas-lookup loops in **Rust via PyO3** (where vectorization in pandas hit a wall).
- Implemented a model + prediction artifact store with versioning and lineage, **~0.6 TB/mo** of cleaned data; any production prediction traces back to its exact model.

- Enhanced **platform observability** with a high-throughput log reader on **Python sub-interpreters** that turns production logs into structured downstream events.
- Built a **Playwright auto-login and session-keeper** that holds authenticated sessions through anti-bot challenges for continuous data ingestion.
- Bootstrapped an 8-machine in-office compute cluster: CI/CD on GitHub, rsync-based artifact sync, env-driven config, internal coordination API.

07/2023 – 2025

### *Computer-vision platform*

- Bootstrapped and maintain microservices for **300+ Jetson edge devices** (hard RAM budget, careful memory engineering).
- Developed the **end-to-end inference pipeline**: WebRTC ingest (aiortc), frame preprocessing, model serving across the fleet, inference, events distribution, latency and quality monitoring.
- Wrote the **fleet manager** via Python Kubernetes SDK: model/binary rollouts, target-vs-actual reconciliation, health and audit APIs.

## Education

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09/2020 – 06/2024

### **BSU, Faculty of Mechanics and Mathematics**

- Pure mathematics track. Relevant coursework: probability & statistics, machine learning, SQL, C++, Matlab.
- Thesis: information entropy & Markov chains.

## Certificates

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MongoDB Python Developer Path [🔗](#) • Redis for Python developers [🔗](#)

## Projects

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04/2026 – Present

### **Snitchbot** [🔗](#) ,

*Thin Sentry-style observability for Python with zero infrastructure*

- Implemented automatic capture of uncaught exceptions, asyncio/threading errors, slow functions, event-loop blocking, and resource anomalies (RSS, CPU, FDs, threads).
- Shipped framework adapters (FastAPI, Litestar, Flask), structlog/stdlib logging bridges, and a live ASCII dashboard delivered via Telegram.

## Interests

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### **Boxing**

best way I've found to sharpen willpower and discipline, and clear the head.

### **Rust enjoyer**

bet on its future; the fastest of the memory-safe languages.

## Languages

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Russian | English | Belarusian