Pavel
Architect/Team-lead Python engineer

SUMMARY

Backend Engineer, 8+ years of hands-on experience architecting production-grade Python systems — primarily with FastAPI, microservices, and cloud-native infrastructure. Specializes in building reliable APIs (REST + GraphQL via AWS AppSync), high-performance data layers, real-time features (WebSocket), and secure, observable platforms that power AI-driven SaaS, FinTech/loan management, personalized education, and meditation applications.

- Robust, versioned APIs with pagination, filtering, bulk operations, and real-time capabilities for enterprise standards.
- Security models using JWT, OAuth2, Cognito/Firebase Auth, and OWASP plus secrets management in AWS.
- PostgreSQL/SQLAlchemy setups with strict validation, indexing, query tuning, migrations (Alembic), and entity versioning (Continuum).
- Integrations & background jobs (Celery/AWS Lambda), idempotent processing, retries, and Stripe/Telegram/webhook handling.
- End-to-end CI/CD with GitHub Actions, Docker, Kubernetes, ECS, ArgoCD for zero-downtime rollouts and automated testing.
- Full observability stacks (Prometheus + Grafana, CloudWatch) with alerts, dashboards, and runbooks for proactive monitoring.
- Comprehensive operational documentation, team training, and code reviews as a Team Lead managing up to 8 engineers.

Optimized high-load endpoints, reduced latency through caching/profiling, enforced business rules at the DB level, and led refactorings and migrations. Passionate about clean architecture, maintainability, and turning complex business needs into elegant, scalable solutions.

TECHNICAL SKILLS

Main Technical Skills	Python (8 yr.), Django REST framework (6 yr.), FastAPI (5 yr.), Flask (1 yr.), React (2 yr.)
Programming Languages	Python (8 yr.), TypeScript
Python Libraries and Tools	Aiogram, aiohttp (3 yr.), AsyncIO (2 yr.), NumPy, Pydantic (2 yr.), PySpark, PyTorch, SciPy
.NET Platform	Azure (1 yr.), Identity Server
Python Frameworks	Django REST framework (6 yr.), FastAPI (5 yr.), Flask (1 yr.)
AI & Machine Learning	GPT (1 yr.), NumPy, PandasAI, PyTorch
JavaScript Frameworks	React (2 yr.)

Data Analysis and Visualization Technologies	PandasAI
Databases & Management Systems / ORM	AWS DynamoDB, MongoDB (3 yr.), Redis (2 yr.), SQLAlchemy (2 yr.)
UI Frameworks, Libraries, and Browsers	HTML, XML
Cloud Platforms, Services & Computing	Azure (1 yr.)
Amazon Web Services	AWS DynamoDB
Deployment, CI/CD & Administration	ArgoCD, CI/CD (2 yr.)
Message/Queue/Task Brokers	Celery (2 yr.), Kafka (1 yr.), RabbitMQ
Virtualization, Containers and Orchestration	Docker Compose, Kubernetes
SDK / API and Integrations	FastAPI (5 yr.), OAuth (2 yr.), RESTful API (5 yr.), Stripe
Version Control	Git (8 yr.), Github Actions (1 yr.)
Web/App Servers, Middleware	gUnicorn (1 yr.), Nginx (3 yr.)
Operating Systems	Linux (8 yr.)
Logging and Monitoring	Prometheus
Mail / Network Protocols / Data transfer	WebSockets (3 yr.)
Other Technical Skills	Marshmallow, Phidata (1 yr.), Python Requests Library (4 yr.)

WORK EXPERIENCE

Backend Developer (SaaS backend platform for AI-driven meditation application)

Duration: 08-2025 - till now

Summary: Developed a SaaS backend platform using FastAPI with a microservice architecture for an AI-driven meditation application supporting personalized meditation sessions, subscription lifecycle management, and real-time user interactions at scale.

Responsibilities:

- Designed and maintained reliable, well-documented APIs.
- Integrated Stripe for subscription billing and recurring payments.
- Improved stability and performance of existing endpoints.
- Introduced automated tests for critical business flows.
- Helped implement CI/CD pipelines with GitHub Actions.

- Contributed to containerized deployments on AWS ECS.
- Optimized high-load endpoints through query tuning, performance profiling, and caching strategies.

Technologies: Python, FastAPI, Docker (-compose), PostgreSQL, DynamoDB, MongoDB, ArgoCD, Github (actions), Firebase Authentication, Stripe, AWS(lambda, S3, ECS), WebSocket

Full-stack Developer (Loan agreements management and analysis solution)

Duration: 03-2025 - 07-2025

Summary: Developed a solution for managing and analyzing loan agreements with support for fixed and floating interest rates, credit facilities, and collateralized loans, featuring versioned data tracking via SQLAlchemy Continuum and strict business logic enforcement at the database level.

Responsibilities:

- Designed a robust data model for comprehensive loan management.
- Enforced business rules at the database level via CheckConstraint.
- Implemented full entity versioning with SQLAlchemy Continuum.
- Built precise ORM mappings with bidirectional relationships and explicit ForeignKeys.
- Ensured Alembic compatibility and optimized migrations.
- Developed data integrity and validation tests using pytest and async SQLAlchemy sessions.

Technologies: Python, FastAPI, PostgreSQL, SQLAlchemy, SQLAlchemy-continuum, Docker (-compose), GitHub, GitHub actions, React

Backend Developer (Modern web-based educational platform)

Duration: 10-2024 - 02-2025

Summary: Developed a modern web-based educational platform personalizing learning for middle and high school students based on the UK school curriculum, enriched with AI to generate interactive lessons, assignments, quizzes, and personalized recommendations.

Responsibilities:

- Designed and implemented project architecture, ensuring modularity, scalability, and maintainability.
- Built an authentication & authorization system using JWT with robust data validation and unified API error handling.
- Optimized database interactions with async SQLAlchemy sessions and query tuning.
- Automated CI/CD pipelines with testing, linting, and zero-downtime deployments.
- Containerized and deployed services in Docker & Kubernetes.
- Implemented observability stack (Prometheus + Grafana) for monitoring and alerting.

Technologies: Python, FastAPI, PostgreSQL, Docker (-compose), AWS(S3, ECS, CW), GitHub, GitHub actions

Fullstack Developer (Fintech Django REST Framework web service for bank detail management)

Duration: 06-2024 - 09-2024

Summary: Developed a fintech web service with monolithic architecture to store and manage bank detail information, supporting secure financial transactions, compliance, user roles, fraud detection, and real-time transaction monitoring.

Responsibilities:

- Optimized SQL queries and API endpoints for performance and scalability.
- Implemented pytest for application testing.
- Configured and optimized Nginx infrastructure.
- Developed fraud detection mechanisms.
- Refactored codebase and architecture.
- Communicated with customer.

Technologies: Python, Django REST Framework, FastAPI, Nginx, Docker (-compose), React

TeamLead, Backend developer, DevOps (Telegram bot for channel communication and AI integration)

Duration: 03-2024 - 05-2024

Summary: Developed a Telegram bot communicating with a Telegram channel, generating HTML conversations, sending requests to AI when answers were not found in a local knowledge base, and providing automated responses for FAQs to improve customer support efficiency.

Responsibilities:

- Optimized database queries and API endpoints.
- Implemented comprehensive testing using pytest.
- Improved bot response time by optimizing request handling.
- Developed robust logging system for monitoring interactions.
- Communicated with customer.

Technologies: Python, aiogram, PostgreSQL, Docker (-compose)

TeamLead, Backend developer, DevOps (Telegram bot integrated as API with customer site)

Duration: 12-2023 - 02-2024

Summary: Developed a Telegram bot integrated as an API with a customer site to send real-time notifications and updates from the site to a Telegram channel, including admin functionalities for managing automated messages and monitoring system health.

Responsibilities:

- Optimized database queries and refactored API endpoints.
- Implemented unit and integration testing using pytest.
- Developed admin dashboard for tracking bot performance and logs.
- Communicated with customer.

Technologies: Python, aiogram, PostgreSQL, Docker (-compose)

TeamLead, Backend developer, DevOps (FastAPI web service for pharmacy data processing and analytics)

Duration: 09-2023 - 11-2023

Summary: Developed a FastAPI web service processing large pharmacy data to determine optimal buying or selling strategies for pharmaceutical elements, with AWS Lambda functions for data processing, real-time analytics, price tracking, inventory management, and demand prediction.

Responsibilities:

- Optimized database queries and enhanced API endpoints.
- Performed application testing using pytest.
- Configured and optimized infrastructure including Nginx.
- Developed scalable system for high traffic loads.
- Communicated with customer.

Technologies: Python, FastAPI, PostgreSQL, AWS (lambda), Nginx, Docker (-compose)

Backend Developer (AI chatbot with multi-session interactions)

Duration: 02-2023 - 09-2023

Summary: Developed an AI chatbot supporting multi-session interactions preserving chat history per user, functioning similarly to OpenAI's ChatGPT, providing answers, assistance, and features based on settings.

Responsibilities:

- Customized backend for ChatGPT integration.
- Connected backend and frontend.
- Analyzed OpenAI documentation and connected necessary endpoints.
- Communicated with customer.

Technologies: Python, Postgres, GPT API, AI Function calling, Phidata

Team lead, Backend developer, DevOps (Django REST Framework microservices chat application)

Duration: 04-2022 - 01-2023

Summary: Developed a microservices architecture chat application using Django REST Framework and FastAPI, integrating Telegram and Viber bots, and a FastAPI microservice for email messaging, providing scalable real-time communication via WebSocket.

Responsibilities:

- Implemented microservices architecture and integrated multiple communication channels.
- Developed real-time communication with WebSocket.
- Designed RESTful APIs and integrated FastAPI microservice for email.
- Implemented error handling and security measures.
- Developed project architecture and deployment scripts on VPS.
- Managed a team of 8 people.
- Communicated with customer.

Technologies: Python 3.9, FastAPI, DRF, PostgreSQL, WebSocket, Linux (VPS), Docker, Docker-compose, Kafka, Aiogram

Team lead, Backend developer (Web microservices for directory content and history monitoring)

Duration: 07-2021 - 03-2022

Summary: Developed Python scripts running web microservices to monitor directory contents and history, configured via XML files, providing a flexible and customizable solution with a public async API for external checks.

Responsibilities:

- Developed scalable microservices architecture using Python and FastAPI.
- Implemented configuration-driven system using XML.
- Optimized code for performance and maintainability.
- Wrote tests and communicated with customer.

Technologies: Python 3.9, FastAPI, Linux, XML, RabbitMQ, Gunicorn, SQLAlchemy, Redis, OAuth2.0

Backend developer (Web service for testing and processing candidate statistics)

Duration: 03-2021 - 06-2021

Summary: Developed a web service for testing and processing candidate statistics, providing a platform for performance assessment, data gathering, and analytics to optimize recruitment and evaluation processes.

Responsibilities:

- Developed candidate testing and analytics platform using Python, DRF, and PostgreSQL.
- Created public API for test administration and data collection.
- Optimized data processing pipelines for performance.
- Implemented robust error handling and data validation.
- Communicated with customers and optimized code.

Technologies: Python 3.9, DRF, PostgreSQL, Linux, Nginx, AWS, Redis

Backend developer (Climate data analytics and ESG metrics platform)

Duration: 04-2020 - 02-2021

Summary: Developed a climate data analytics platform providing ESG metrics and predictive insights on carbon exposure and energy transition, leveraging AWS and Azure cloud services.

Responsibilities:

- Developed backend using Python, FastAPI, and AWS.
- Created public API for environmental emissions data collection and processing.
- Integrated AWS AppSync for GraphQL synchronization.
- Implemented data processing pipelines for insights extraction.
- Processed statistics in the background using AWS Lambda and S3.
- Communicated with customers and optimized AWS resource usage.

Technologies: Python 3.8, FastAPI, AWS (lambda, S3, ECR, Cognito, API Gateway, CodeBuild, AWS AppSync, SM, CW), Azure, TypeScript

Backend developer (Advertisement Management System)

Duration: 12-2019 - 03-2020

Summary: Developed an Advertisement Management System to streamline the creation, management, and analysis of advertising campaigns across various sites.

Responsibilities:

- Developed an advertisement management system using Python, FastAPI, and AWS.
- Created a robust public API for data collection and processing related to ad displays.

- Utilized AWS Lambda and Kinesis for real-time data processing.
- Optimized codebase for performance and scalability.
- Communicated with the customer.

Technologies: Python 3.8, FastAPI, AWS (lambda, S3, Amazon Kinesis)

Backend developer, Team lead (Biology advice and support service)

Duration: 03-2019 - 11-2019

Summary: Developed a biology advice and support platform providing experimental design and result interpretation support in molecular biology.

Responsibilities:

- Developed a platform using Python, Flask, FastAPI, MongoDB, and Elasticsearch.
- Implemented a public API for data provision to other services.
- Optimized API endpoints and created a comprehensive test suite.
- Improved test execution speed and identified UX improvements.

Technologies: Python 3.6, Flask, FastAPI, MongoDB, Celery, AWS localstack, Marshmallow, Elasticsearch

Backend developer, Team lead (Office management system for workspace allocation)

Duration: 11-2018 - 02-2019

Summary: Developed an office management system automating workspace allocation for employees within a building layout to optimize space utilization.

Responsibilities:

- Developed a system using Python, Django REST Framework, and PostgreSQL.
- Created a public API for integration with company systems.
- Implemented workspace allocation algorithms and integrated with BambooHR.
- Developed a comprehensive test suite.

Technologies: Python 3.8, Django REST Framework, PostgreSQL, Asyncio, Aiohttp

Backend developer (User selection and communication platform by photo)

Duration: 08-2018 - 10-2018

Summary: Developed a platform to select users by photo and communicate with users who liked the photos.

Responsibilities:

- Developed a platform using Python, Django REST Framework, and Celery.
- Created a robust public API for integration.
- Optimized codebase through refactoring.
- Communicated with the customer.

Technologies: Python, Django REST Framework, Celery, PostgreSQL

Backend developer (Trading platform with microservices architecture)

Duration: 05-2018 - 07-2018

Summary: Developed a scalable and flexible trading platform using a microservices architecture for financial transactions and trading activities management.

Responsibilities:

- Developed a platform using Python, Django REST Framework, FastAPI, Celery, PostgreSQL, and Kafka.
- Created a robust public API for integration.
- Implemented microservices for stats collection, processing, and email notifications.
- Optimized codebase and refactored code.
- Communicated with the customer.

Technologies: Python, Django REST Framework, FastAPI, Celery, PostgreSQL, Kafka

Trainee - IBA group (ML and BigData internship at IBA group)

Duration: 07-2017 - 04-2018

Summary: Completed internship focused on machine learning and big data tasks, including PySpark development, weather forecasting, and MNIST dataset tasks.

Responsibilities:

- Implemented own Spark cluster.
- Developed multiple big data tasks.
- Worked on weather forecast and MNIST tasks.

Technologies: Python, ML, scipy, numpy, pandas, PySpark, PyTorch

EDUCATION

- **Bachelor of Computer Engineering**
  GSU
  2018 - 2022