



# Stanislav Yaranov

Senior Software Engineer | System Design & Architecture

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## Top Skills

- ✓ Software Architecture
- ✓ Distributed Systems
- ✓ System Design
- ✓ PostgreSQL
- ✓ Node.js
- ✓ TypeScript
- ✓ AI integration
- ✓ Python

## Certifications

### Deep Learning Specialization

January 2019

Coursera

<https://www.coursera.org/account/accomp>

### Machine Learning

November 2018

Coursera

<https://www.coursera.org/account/accomp>

### IBM Blockchain Foundation for Developers

March 2018

Coursera

<https://www.coursera.org/account/accomp>

## Languages

English

C1

Russian

Native

## Profiles

🌐 LinkedIn

[stanislav-yaranov](#)

🐙 GitHub

[afewlinesofcode](#)

## Summary

Senior Software Engineer specializing in system design, distributed systems, and architecture modernization. Over more than 20 years, I have designed and built complex software systems including mission-critical platforms, AI-enabled products, high-performance interactive applications, and embedded control systems.

I focus on understanding requirements, defining system boundaries, designing data flows, and taking ownership from architecture through implementation.

## Education

Kazan National Research Technical University named after A.N.Tupolev – KAI

Engineer's degree

Computer Science & Applied Mathematics

(2001 - 2007)

## Experience

Toptal

September 2017 - Present (9 years)

Senior Software Engineer

Work with international clients (US and Europe) through Toptal on complex, high-load web platforms and large-scale production systems. Contributed to architecture evolution, system modernization, and performance optimization across multiple long-term engagements.

Selected engagements:

### AI-driven system stabilization

Engaged to stabilize a rapidly evolving system with an AI-generated codebase and significant architectural inconsistencies.

Stack: TypeScript, Next.js, Node.js, React, AWS, Supabase, Anthropic Claude, Vercel

- Restructured an AI-generated TypeScript/Next.js codebase into distinct data access, AI integration, and business logic layers, establishing the architectural foundation for MVP development and future evolution.
- Scaffolded the initial domain-oriented context structure, providing a foundation for future decomposition and independent evolution of major business areas.

- Produced architectural documentation and formalized system design decisions to establish a shared technical understanding and support future evolution of the platform.
- Leveraged AI-assisted workflows to accelerate large-scale refactoring while maintaining architectural consistency and engineering quality.

### AI-powered branding platform

Stack: JavaScript, TypeScript, Next.js, Node.js, React, AWS, PostgreSQL, OpenAI, GraphQL, Docker

Contributed to the evolution of Looka.com, a large-scale browser-based branding platform focused on visual content and brand asset generation

- Led migration of a legacy class-based React codebase to a modern hook-based architecture, improving maintainability and simplifying further feature development.
- Integrated AI-assisted design workflows using OpenAI to enhance asset generation and creative productivity.
- Designed and implemented the architecture of a complex Canva-style editor, including geometry processing, rendering logic, custom state management, and React integration layers optimized for intensive real-time interaction.
- Optimized serverless microservices and background workflows, reducing execution time by up to 70% while improving operational efficiency.

### Construction Management Platform

Stack: PHP, Laravel, Vue.js, PostgreSQL, MySQL, REST, Docker, SendGrid, Twilio, JWT

- Designed and developed a full-stack platform from scratch to manage construction projects, budgeting, reporting, and day-to-day business operations for a residential construction company.
- Implemented backend services, database schema, and frontend functionality, taking ownership of the system across the entire stack.
- Dockerized the application and established a reproducible development and deployment environment.

### GDC Services Russia

Kazan

Senior Software Engineer January 2017 - September 2017 (9 months)

Led delivery of an enterprise solution for a German customer, combining technical leadership, architecture, and hands-on development.

Stack: C#, .NET, React, PowerShell, Active Directory, Exchange, NUnit, Moq, Ninject

- Designed and implemented integrations with Active Directory and Exchange using PowerShell.
- Coordinated technical communication with the client, translating business requirements into implementation plans and technical solutions.
- Introduced test-driven development practices using NUnit, Moq, and Ninject, establishing them as part of the team's development workflow.
- Delivered internal training sessions on React and software architecture, helping engineers adopt modern development practices.

### GLONASS+112

Kazan', Russia

Senior Software Engineer | Team Lead

2010 - 2017 (7 years)

Architected and led development of mission-critical systems for the Republic of Tatarstan, including the regional emergency response platform (112), vehicle monitoring systems, GIS infrastructure, and the command center for Universiade 2013.

Stack: PHP, JavaScript, jQuery, Node.js, Socket.IO, SockJS, C, C++, Boost, Boost.Asio, libevent, epoll, PostgreSQL, PostGIS, Mapserver, Mapnik, OpenLayers, Leaflet, Java, Avaya

- Designed and developed web applications for emergency operators, dispatchers, and controllers, providing real-time GIS visualization, incident management, reporting, and operational monitoring.
- Built integrations with telephony (Avaya) and multiple government agencies, enabling automated incident routing and cross-system data exchange.
- Designed the database architecture, replacing the originally planned Oracle solution with PostgreSQL and introducing replication and sharding strategies to improve scalability while significantly reducing licensing costs.
- Implemented a custom C patch for PostgreSQL to support synchronous multi-master replication with selective exclusion of sharded tables, improving high availability for distributed deployments.
- Designed and implemented a multithreaded event-driven server in C/C++ using select, epoll, libevent, and Boost.Asio to process telemetry and device communications at approximately 1,000 requests per second and deliver real-time operational data.
- Developed algorithms for filtering telemetry noise and detecting coordinate anomalies to improve positioning accuracy and data quality.

#### **Norbit**

Kazan', Russia

X++ Developer

2008 - 2010 (2 years)

Worked on enterprise solutions built on Microsoft Dynamics AX.

Stack: X++, C#, Microsoft SQL Server

- Developed custom modules and business process automation components.
- Participated in system integrations and ERP customization for large organizations.

#### **GDC (Fujitsu preferred supplier of Services)**

Kazan', Russia

.Net Developer

2007 - 2008 (1 year)

Contributed to backend development of a large-scale eCommerce platform for an international client.

Stack: Microsoft SQL Server, ASP.NET, C#

- Implemented business logic and multithreaded service components supporting high transaction volumes.
- Worked with Microsoft SQL Server, focusing on data integrity and performance.
- Collaborated across distributed teams, ensuring alignment between business requirements and technical implementation.

#### **ICL KME CS**

Kazan', Russia

C++ Developer

2004 - 2007 (3 years)

Worked on a client-server system written in C++ on FreeBSD, focused on real-time data exchange and visualization.

Stack: C++, STL, Qt, FreeBSD

- Implemented a UDP-based communication layer for low-latency data transfer.
- Developed multithreaded backend components handling real-time operational data.
- Built 3D visualization modules and specialized data management tools.
- Contributed to core architectural components of a distributed system.

## Projects

**embys-fw**

January 2025 - Present

Developing an interrupt-driven embedded framework and applying it to build a modular real-time control system for smart HVAC airflow regulation.

Stack: C, C++, STM32, I2C, SPI, UART, Modbus RTU, RS-485, KiCad

- Designed and implemented an event-driven C++ framework for STM32 microcontrollers with deterministic execution and modular architecture.
- Built the runtime around interrupt-driven scheduling with drift-free periodic task execution, making it suitable for timing-critical control applications.
- Applied the framework to a distributed smart HVAC control system integrating embedded controllers, supervisory logic, and communication layers.
- Architected firmware for real-time airflow balancing, sensor acquisition, and actuator control using I2C, SPI, and RS-485/Modbus, implementing custom peripheral drivers to minimize runtime overhead and binary size.
- Designed custom PCB layouts integrating sensors, displays, communication interfaces, and actuator control circuitry.

<https://github.com/afewlinesofcode/embys-fw>

**Youtube RAG Chat**

2026

- Designed and implemented a production-oriented RAG application for conversational interaction with YouTube content using FastAPI, PostgreSQL/pgvector, Celery, and Redis.
- Built asynchronous ingestion workflows with retry-aware background processing, idempotent document handling, and automatic recovery from failed jobs.
- Architected retrieval and persistence layers with clear service boundaries and implemented a React frontend for interactive querying.

<https://github.com/afewlinesofcode/youtube-rag>