

# Alexander Efimenko

## Full-stack Developer

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Ottawa, Ontario, Canada

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### OVERVIEW

- Full-Stack Developer with over 6 years of experience in building RESTful APIs, web applications and data management systems
- Strong backend skills: TypeScript, Node.js, Next.js, SvelteKit, Express.js, PostgreSQL, Prisma ORM, C#, MS SQL Server
- Experience in cloud development with AWS Cloud Development Kit, AWS Lambda, AWS Cognito, Azure Container Registry, Azure Blob Storage, and other cloud services
- Implemented microservices event-driven architecture using Docker containers and RabbitMQ message broker
- Designed CI/CD pipelines using GitHub Actions and Azure DevOps. Created Docker Compose files for managing containers and used Jest and Cypress to test the code
- Author of blog on Medium and Dev.to about TypeScript, Next.js, and Docker with total monthly views over 10K

### PROFESSIONAL EXPERIENCE

May 2024 – Current

Cloud and Full-Stack Developer

**Syntronic R&D Canada Inc**

#### **Cloud-based backend for Bluetooth-enabled smart home (11 months)**

**Intro:** The application connects smart rear-view mirrors with a mobile app to the cloud and allows users to control their home devices from the car. Once a user presses a button on the mirror, the app sends a signal to the cloud, which then sends a request to the smart home device connected through Alexa, Google Home, SmartThings, or Home Assistant. For example, the user can open the garage door, turn on the lights or the heating system from the car.

**Team size:** 6

#### **Responsibilities:**

- Developed Admin Web Portal from scratch for customer support and device management using SvelteKit
- Created infrastructure as code using AWS Cloud Development Kit (CDK) to deploy the SvelteKit application on AWS AppRunner
- Implemented RESTful API routes on the backend using Node.js and Express.js
- Created infrastructure as code using AWS CDK to deploy the Node.js application on AWS Lambda and API Gateway
- Implemented user authentication and authorization using AWS Cognito, JWT tokens and Auth.js
- Developed dashboard for monitoring and managing user data, devices and connections
- Implemented pipelines for CI/CD using Azure DevOps to build, test, and deploy the application
- Configured Docker containers for the application and dev containers

- Created unit tests using Supertest and Uvu for the backend. Vitest and Testing Library for unit and component tests for the frontend
- Configured ESLint to ensure code consistency between repositories

**Technologies:** Node.js, Express.js, TypeScript, PostgreSQL (Aurora DB), AWS Cloud Development Kit, AWS Lambda, AWS API Gateway, AWS S3, AWS Cognito, Azure DevOps, Docker, Supertest, Uvu, ESLint, SvelteKit, Auth.js, Tailwind CSS, Skeleton UI, Vitest, AWS ECR, AWS AppRunner, Echarts

Aug 2023 – Feb 2024

Full-stack Developer

**CyberCap. Montreal, Canada (Remote)**

### **AI Portal (7 months)**

**Intro:** The application is designed to teach students prompt engineering using the OpenAI platform. The portal allows users to chat with an AI bot, saving the chat history in a database. Also, the app sends prompts to the OpenAI platform to generate images which are saved to an AWS S3 storage. Teachers can create workshops and provide temporary access to the portal for students with token-based limitations of usage.

**Team size:** 4

#### **Responsibilities:**

- Developed TypeScript type-safe tRPC API routes (GET/POST/PUT/DELETE) using Next.js
- Created the database model using Prisma ORM and PostgreSQL
- Created dockerfile and Docker compose files for the application and related services
- Implemented file storage using AWS S3 for production and Minio S3 for development and testing
- Designed CI/CD pipelines with GitHub Actions to build, test, and deploy the application on Vercel
- Implemented authentication with Google and Microsoft providers using NextAuth and JWT authorization based on the user's role
- Created UI/UX components and pages using React, Shadcn/ui, and Tailwind CSS
- Developed form validations using React Hook Form and Zod
- Developed workshop management with temporary access for students and token generation
- Implemented localization of the app for English and French using the i18next library
- Created e2e tests using Cypress and unit tests for using Jest
- Configured development tools - Prettier and ESLint to ensure code consistency

**Technologies:** TypeScript, Next.js, Node.js, AWS S3, Minio S3, Vercel AI SDK, React, NextAuth, tRPC, Zod, Tailwind CSS, i18next, Prisma ORM, PostgreSQL, Docker, GitHub Actions, Cypress, Jest

Jan 2023 – Sep 2023

Full-stack Developer

**Blute. London, United Kingdom (Remote)**

### **Clinical placement tracker (8 months)**

**Intro:** The web application is designed to enhance communication between clinic staff and healthcare students during their clinical placement training. The application serves as a digital journal for students to document their experiences in real time and output visualization of key indicators on the dashboard. The project involved conducting user research, surveys, and interviews with students and clinical staff to understand their needs and pain points.

**Team size:** 3

#### **Responsibilities:**

- Developed API routes (GET/POST/PUT/DELETE) on the backend using Node.js
- Created the database model using Prisma ORM and PostgreSQL for storing surveys, answers, and user data
- Set up cron jobs using Vercel Functions for sending reminders
- Created user interface components using React, Shadcn/ui, and Tailwind CSS
- Developed multi-step conditional registration form with validation using React Hook Form and Zod
- Created email features for sending magic links, notifications, and reminders using Nodemailer and SendGrid

- Implemented registration, authentication, session management, and role-based access control using NextAuth
- Implemented the survey feature for students and clinical staff to create, edit, and submit surveys using SurveyJS
- Created complex nested queries using Prisma Client for dashboard data visualization
- Implemented dashboard data visualization with filters and search using Recharts and React Query
- Created unit tests using Jest
- Created dockerfile and Docker compose files to run the application and PostgreSQL

**Technologies:** TypeScript, Node.js, Next.js, Vercel Functions, React, NextAuth, Zod, Tailwind CSS, SurveyJS, Prisma ORM, PostgreSQL, Jest

Mar 2016 - Oct 2022

Founder, Full-stack Developer

**DropDomain (Reg.ru partner). Saint Petersburg, Russia - Batumi, Georgia**

### **DropDomain Reseller Portal (6 years, 7 months)**

**Intro:** The system collects and analyzes information about all domain names in the .ru zone (more than 5,000,000 domain names). The system consists of 3 parts:

- Parsers that collect information about domain names from various sources (Whois, Alexa, Reg.ru, Yandex, Majestic, Megaindex, Sbis, etc.), transform it, and pass data through RabbitMQ to the second module. Each service is built to run in a Docker container
- The control panel consists of a database and a web application. The database stores information about domain names and all the information collected. The web app also allows the setup and configuration of parsers, view statistics, and graphs.
- Business logic contains a web application and a service that automatically buys and sells domain names through the API of the domain registrar Reg.ru. The web app sets rules for the automatic buying and selling of domain names through the API of the domain registrar Reg.ru.

**Team size:** 2

#### **Responsibilities:**

- Designed the event-driven architecture using Docker containers and RabbitMQ message broker. Provisioned the structure and interaction of the three main parts (parsers, control panel, and business logic). Used Azure Functions to run parsers and send data to the message broker.
- Built the parser system. Created the software modules that gather data from Whois, Alexa, and other sources and send this data with the message broker using Docker containers.
- Developed the database using MS SQL Server and Entity Framework ORM. Designed the database to efficiently store domain data and collected information.
- Created the control panel web application. Built the web interface for managing the system, configuring parsers, and viewing data using ASP.NET MVC and Entity Framework.
- Developed the business logic web application. Created the web interface for setting up automated domain buying/selling rules
- Built the business logic service. Developed the module that automatically executes domain purchases and trades using Reg.ru API endpoints.

**Technologies:** C#, .NET core, ASP.NET MVC, Azure Functions, Azure Container Registry, Azure Resource Manager, Entity Framework, MS SQL Server, Docker, RabbitMQ, JavaScript, Chart.js

Sep 2017 - Aug 2019

External IT Consultant

**Project Development Institute No.1. Saint Petersburg, Russia**

### **1C Document Management (2 years)**

**Intro:** Provided advice on information systems issues and modified for customer needs digital document management software for an organization with 100 employees.

**Team size:** 1

#### **Responsibilities:**

- Information support, consultations on the installation and configuration of digital document management software “1C Document Management”
- Conducting technical studies at the request of the users on modification and improvement of the system
- Testing and implementing information systems business solutions, quality control, stability, and system availability, and updating the information base
- Implementing maintenance procedures to maximize the efficiency of the information system.

**Technologies:** 1C Enterprise, 1C Document Management, MS SQL Server, Jira

May 2015 to Aug 2017

Lead Engineer

**Project Development Institute No.1. Saint Petersburg, Russia**

### **1C Document Management (2 years, 4 months)**

**Intro:** Implemented and modified to customer needs digital document management software for 4 organizations with a total number of employees of more than 300.

**Team size:** 7

#### **Responsibilities:**

- Setup, maintenance, and development of business solutions using 1C programming language embedded in the “1C Enterprise” platform
- Managing, monitoring, and maintaining MS SQL Server databases, ensuring database security, stability, and system availability. Maintaining database backup and recovery infrastructure.
- Developing and maintaining documentation for users
- Providing workshops, training, and technical support for users

**Technologies:** 1C Enterprise, 1C Document Management, MS SQL Server, Jira

Dec 2010 - Apr 2015

Technical Support Engineer

**North-West territorial administration of the property relations. Saint Petersburg, Russia**

**Intro:** Implemented and customized digital document management system “E1 Evfrat” which helped the company boost cooperation between all departments and optimized the workload of the staff. Implemented monitoring, optimizing, and upgrading hardware, software, and related computer equipment.

**Team size:** 2

#### **Responsibilities:**

- Research, diagnosis, troubleshooting, and resolving customer issues with software and hardware.
- Maintenance and coordination of local and global network hardware, software, and related computer equipment.
- Installation, maintenance, troubleshooting, and upgrading database server hardware and software.
- Documentation of technical issues, solutions, and support procedures.

**Technologies:** E1 Evfrat, Microsoft SQL Server, Windows Server, Microsoft Active Directory

## EDUCATION

2008 - 2014

Master's degree in Aircraft Control Systems Engineering

**Baltic State Technical University. Saint Petersburg**

## KEYWORDS

TypeScript, Node.js, Express.js, AWS, Azure, PostgreSQL, Prisma ORM, NextAuth, tRPC, Zod, JavaScript, React, Next.js, Shadcn/ui, Tailwind CSS, i18next, Docker compose, GitHub Actions, Cypress, Jest, C#, .NET core, ASP.NET MVC, Entity Framework, MS SQL Server, RabbitMQ, Jira, Windows Server