

Matvei Stepanov

Senior developer

I can make object-oriented software well, although I tend to write in functional style lately. I thoroughly understand and use the agile software development methodology: from requirement gathering and planning; through designing, coding and refactoring; to DevOps activities, deployment and maintenance. I have been improving my knowledge of CS and math since I left the university. And I truly enjoy doing my work.

EXPERIENCE

Research institute NIIGazekonomika, *Lead developer*

2011 - present

- Developed and reviewed program code
- Designed low and high level architecture
- Installed and tuned software development process for the team
- Planned team's work
- Participated in requirements gathering
- Designed DevOps pipelines

Research institute VNIIGAZ, *Senior developer*

2008 - 2011

Software development company EPAM Systems, *Developer*

2007 - 2008

State university MPhI, Department of computer systems and technologies, *Developer*

2006 - 2007

Software development company NIVC AS, *Junior developer*

2003 - 2006

EDUCATION

Moscow Engineering Physics Institute (State university), *Engineer*

2001 - 2007

With the specialization "Computers, computer-based complexes, systems and networks", GPA 4.42 (of 5)

Degree thesis "Development of hopping robot control system"

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SKILLS

Object-oriented programming, functional programming

Evolutionary architecture, domain-driven development, design patterns

Test-driven development, refactoring, code review

Agile requirements gathering, planning, team leading

DevOps automation

IELTS General 8.0 (of 9.0)

TECHNOLOGIES

C#, F# (beginner)

.Net Framework, .Net Core

Entity Framework, SQL

WPF-MVVM, WinForms-MVP

WCF, ASP.Net Core

TPL async/await, Dataflow

Beginner: Typescript, Angular, HTML, CSS, Javascript

C++ 98, STL, Win32

MOOCS

Introduction to Functional Programming 96%

Algorithms: Design and Analysis 95%

Introduction to Probability Theory 99%

Linear and Discrete

Optimization 95%

AI Planning 90%

Control of Mobile Robots 100%

Linear Algebra through CS

Applications 96%

Machine Learning 100%

Game Theory 98%

Programming a Robotic Car

Introduction to AI 98%

LAST PROJECTS

Chatbot for shared expenses tracking

The chatbot provides recording, tracking and calculation of the shared expenses made by a group of people throughout some joint activity in order to minimize the real money flow between the participants by applying total debts clearing. The solution consists of two web services and one web application: the chat frontend responsible for parsing commands from chat applications, the backend performing all the domain and storage related tasks, and the web frontend exposing backend functionality through a web page. The chat frontend is a client of Microsoft Bot Framework services and API, the backend is an ASP.Net Core application based on the Event Sourcing pattern and the web frontend is an Angular single page application.

.Net Core 2, C# 7, Asp.Net Core, Entity Framework Core, MS Bot Framework, Typescript, Ramda, Angular 2+, Event Sourcing

Investment projects economic efficiency evaluation and ranking

Module for the corporate investment projects (IP) repository solution. The repository is a 3-tier application with the thick client providing advanced CRUD and composing functionality concerning corporate IPs and programmes. The module manages IPs' economic data, actualizes it in various ways and calculates various economic metrics allowing to compare and rank the IPs. The highlights:

- Negotiated the functionality scope and deadlines with the customer
- Designed the module architecture applying Domain-Driven Development techniques
- Used message bus based architecture in one of the module's bounded contexts
- Introduced F# in the mathematical part of the module

.Net 4.0, C#, F#, WinForms-MVP, WCF, ADO.Net Entity Framework

Gas transport system simulator

Solution for gas transport system (GTS) hydraulic state (pressure, temperature, flow etc.) monitoring, simulation, reconstruction and analysis. Distributed application consisting of central simulation server with real GTS sensors polling service, thick simulation results presentation client, GTS schemes repository in relational database and standalone application for GTS scheme and scenarios editing and simulation results analysis. The highlights:

- Designed high-level solution and module architecture
- Evolved agile development process for the team of 4 developers and 1 tester by incorporating automated smoke testing and deployment to staging area, which allowed the process to run smoothly with only 1 tester
- Designed the continuous delivery pipeline: SVN -> building -> unit testing -> integration testing -> distributive building -> deployment (to staging environment) -> smoke testing
- 5 releases are successfully delivered, the total test suite contains 900 tests

.Net 4.5, C#, WPF-MVVM, WCF, Prism, PostSharp, Entity Framework, yWorks yFiles, OpenEnterprise SCADA

Basic mobile robot control system

<http://brumba.ru/basic-control-system-of-a-mobile-robot/>

The goal of the control system is to drive the differential drive robot equipped with lidar sensor from a known initial position to another position within the scope of a known map avoiding collisions with uncharted obstacles. The control system consists of the services performing: odometry position estimation using the differential drive model; occupancy grid map providing; localization using the particle filter algorithm; navigation based on the Dynamic Window Approach algorithm; and path planning using the A* search with the Jump Points expansion.

.Net 4.0, C#, MS Robotics Developer Studio, Code Contracts, WPF