



# Светослав Хаджииванов

Solution Architect в RJO'Brien

Занимавам се с програмиране от ранна училищна възраст – III клас. Тогава получих първата си награда за създаване на компютърната игра "Трите котки" в национален конкурс, организиран от българския детски интернет портал az-deteto.bg. Продължавам да се развивам с всеки изминал ден, тъй като програмирането е един продължителен процес на учене.

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📄 stackoverflow.com/users/12090115/hulkstance

## 🎓 ОБРАЗОВАНИЕ

### ДОКТОРАНТ ПО ИНФОРМАТИКА И КОМПЮТЪРНИ НАУКИ

Институт по математика и информатика на БАН

01/2023 - днес

Тема на дисертационен труд:  
Анализ и разработка на  
информатични модели в  
алгоритмичната търговия

### МАГИСТЪР ПО СОФТУЕРНО ИНЖЕНЕРСТВО

Русенски университет "Ангел Кънчев"

10/2019 - 06/2022

### БАКАЛАВЪР ПО КОМПЮТЪРНИ НАУКИ

Русенски университет "Ангел Кънчев"

09/2015 - 06/2019

## 📄 ПУБЛИКАЦИИ

MIM'23

### Optimal Algorithmic Grid Trading in Cryptocurrencies

2 окт, 2023

AMiTaNS'23

### Improving Algorithmic Trading in Cryptocurrencies with ChatGPT

21-26 юни, 2023

ICDD'19

### Advancing .NET Obfuscation: Next-Generation Obfuscation Techniques

17-19 май, 2019

ICDD'18

### Bypassing Antiviruses with ease

17-19 май, 2018

## 🏆 ПОСТИЖЕНИЯ И НАГРАДИ

### Голямата награда за разработка в ICDD

Диплом и парична награда за разработка, направление „Разработки“ – ICDD Международна конференция по приложно програмиране – Сибю, Румъния, 17 – 19.05.2018 год. /Наградата е единствена в това направление/

### Русе XXI век

Наградата „Русе XXI век“ /парична/ - Русе, 1.11.2018 год. Отличieto се връчва от Кмета на Община Русе за изключителни постижения в областта на науката на студент, предложен от Академичното ръководство на РУ „Ангел Кънчев“. /Наградата е единствена/

### Голямата награда на еврокомисар Мария Габриел в хакатона „Цифровият град и аз“

Спечелена за разработка, екипно с отбор „Purple Team“ – Бургас, май 2018 год. Наградата е участие в CODE WEEK – Brussels 2018 и представяне на разработката по време на Седмичата на кодирането в Европейския парламент - Брюксел, Белгия. Отличieto е единствено за всички направления.

### Иновативно младежко експо

Сертификат за отлично представяне – Иновативно младежко експо III – Русе, 14.06.2018 год. - Тук не се присъждат места, а по преценка на жури, най-добрите получават сертификати.



## ПОСТИЖЕНИЯ И НАГРАДИ

### Награда в Sorernicus Hackathon

Екипна награда от Sorernicus Hackathon – билети за най-голямото технологично събитие – WEBIT – София, 23.04.2019 год., връчена от Камен Илиев, директор на офиса за технологичен трансфер за аерокосмически технологии при БАН.

### I място за разработка в професионално направление „Информатика и компютърни науки“

Грамота - първо място за разработка в представянето на студенти от професионално направление „Информатика и компютърни науки“ – Русе, 5.12.2016 год.

### I място на олимпиадата по програмиране

Грамота - първо място /екипно/ - Университетска олимпиада по програмиране – II кръг – Русе, 21.05.2019 год.

### Награда за AI разработка от SpaceApps Challenge

Награда за AI разработка от SpaceApps Challenge, 18 – 20.10.2019 год.

### I място за разработка в професионално направление „Информатика и компютърни науки“

Грамота - първо място за разработка в представянето на студенти от професионално направление „Информатика и компютърни науки“ – Русе, 18.12.2017 год.

### Сертификат – Еразъм+

Сертификат – Еразъм+ от Младежки обмен „Youth for Climate Action“ – Самоков, 7 – 13.09.2021 год. Участват студенти от Египет, Тунис, Гърция и България. Комуникацията беше изцяло на английски език.



## ТЕХНИЧЕСКИ УМЕНИЯ

|                               |  |                              |  |
|-------------------------------|--|------------------------------|--|
| <b>Cloud Platforms</b>        | Azure, AWS   | <b>Programming Languages</b> | C#, JavaScript, TypeScript, Python, SQL, Batch/Shell, C, C++, Assembly |
| <b>Web Development</b>        | ASP.NET Core, React, Angular   | <b>Databases</b>             | SQL Server, PostgreSQL, DynamoDB                                       |
| <b>ORMs</b>                   | EF Core, Dapper  | <b>Search Engine</b>         | Elasticsearch  |
| <b>APIs and Communication</b> | REST, WebSockets, gRPC, GraphQL, SignalR   | <b>Actor Frameworks</b>      | Akka.NET, Proto.Actor, Microsoft Orleans                               |
| <b>Message Brokers</b>        | RabbitMQ, Kafka, AWS Kinesis, Azure Service Bus, NATS, Redis   | <b>DevOps</b>                | Docker, Kubernetes, Terraform, Pulumi, NUKE                            |
| <b>Architecture</b>           | Microservices, Event-Driven Architecture, Actor Model, CQRS, Event Sourcing, TDD, DDD, System Design | <b>Version Control</b>       | Git  |



## ТРУДОВ ОПИТ

### Solution Architect / Lead Software Developer

RJO'Brien

06/2023 - днес

Chicago, Illinois (Remote)

Microservices, Azure, ASP.NET Core, React.js, SQL Server, EF Core, Hangfire, SignalR, Redis

#### Contributions

- Implemented a state machine for contract state transition, effectively resolving a significant production bug with substantial commercial implications. The previous code lacked centralization and reusability, resulting in repetitive and error-prone logic. With the state machine, I centralized this logic, making it easier to manage and maintain. I backed up my solution with an extensive suite of over 100 integration tests, covering various workflows and edge case scenarios.
- Revamped their CQG integration by introducing a request/response mechanism (similar to HTTP but over websocket). This critical improvement resolved mishedging issues caused by the previous fire-and-forget request approach, which had significant commercial implications. I strategically replaced only the relevant portion of the service with the new request/response mechanism, restoring their confidence in the continued use of the websocket protocol.
- Managed the refactoring and optimization of the legacy codebase, reinforced by comprehensive code reviews and guidance to team members. Resulted in an 80% reduction in production bugs and a 45% improvement in system performance.
- Replaced ineffective patterns with better architectural approaches, like introducing Vertical Slice Architecture for one of the projects, resulting in improved code organization and maintainability.
- Optimized complex SQL queries, reducing their execution time from approximately 30 seconds to just a few milliseconds.

## Senior Software Engineer

RJO'Brien

02/2023 - *днес*

Chicago, Illinois (Remote)

Microservices, Azure, ASP.NET Core, React.js, SQL Server, EF Core, Hangfire, SignalR, Redis

### Contributions

- Designed and implemented a real-time notification feature (Facebook like) using SignalR and Azure Communication Services for the purpose of notifying users about hedges created by the system, incorporating Email and SMS functionality.
- Guided and mentored a large team of 25 people by sharing best practices and offering guidance for their user stories and feature development.
- Demonstrated a quick understanding of the domain, which enabled me to resolve numerous production bugs, including long-standing concurrency issues that had persisted for months.
- Worked on an integration testing framework using xUnit, FluentAssertions, and Testcontainers, enabling comprehensive end-to-end testing of workflow scenarios specified in the user stories. This effort significantly reduced the reliance on manual QA regression testing and helped prevent the recurrence of production issues.
- Mitigated intermittent system disconnects caused by backpressure, a result of mixed synchronous and asynchronous code. The primary issue stemmed from a semaphore that blocked the WebSocket Client message processing pipeline. This prevented significant financial losses.

## Senior Software Engineer

STS Digital AG

02/2022 - 04/2023

Zug, Switzerland (Remote)

AWS, ASP.NET Core, Proto.Actor, PostgreSQL, EF Core, DynamoDB, Redis, NATS, Python

### Contributions

- Developed a foundational exchange connector library for 12+ cryptocurrency exchanges and FX brokerages, abstracting essential operations into a base client to ensure codebase maintainability, cross-exchange compatibility through common interfaces, and resiliency.
- Implemented in-memory collections for Order Books, Orders, Positions, Trades, and Wallets using Rx.NET, in compliance with the non-functional requirement for performance. These collections enable fast access to data and are backpressure-free.
- Developed a high-performing websocket library that outperformed popular solutions on GitHub in performance tests. This library offers robust backpressure management, extensive customization options through multiple Builder patterns, and simplified setup with preconfigured presets via Factories.
- Implemented a market data streaming API using SignalR and wired it up with Proto.Cluster to distribute the load evenly across Kubernetes nodes. This setup provides users with real-time market insights, keeping them in sync with fast-paced markets.
- Established GitHub CI/CD pipelines for automated deployments across QA, UAT, and Production environments in AWS.
- Utilized Pulumi for Infrastructure as Code (IAC), following best practices.
- Integrated Nuke for build automation, which proved valuable by enabling local debugging for CI/CD pipelines.
- Developed a message bus library that integrated Redis, NATS JetStreams, and AWS Kinesis. The selection of these technologies was intentional; Redis was chosen to avoid rewriting existing Python code. NATS JetStreams played a crucial role in the reconciliation feature, combining data from different sources and deduplicating it to ensure low latency and overall event consistency.
- Investigated and fixed an edge case scenario related to partial fills in the event-sourced order management system. Developed integration test cases for the workflow, ensuring the fix's validation.
- Worked on the development of the internal accounting system, including its integration with AWS RDS, with a primary focus on transactional operations to guarantee accuracy and reliability.

## Proto.Actor Contributor

Asynkron AB

05/2021 - *днес*

### Contributions

- Introduced Drop Head and Drop Tail backpressure strategies to the bounded mailboxes, optimizing the .NET implementation that utilizes System.Threading.Channels.
- Contributed to the project documentation, ensuring implementations are clear and easy to understand.
- Helped community members on Slack by answering questions and assisting with their issues.
- Provided answers and guidance on StackOverflow for Proto.Actor questions.



## Software Validation and Verification Lecturer

"Angel Kanchev" University of Ruse

02/2021 - 06/2021

### Contributions

- Designed course modules integrating both theoretical concepts and practical applications, influenced by my firsthand experience from working in actual software companies and frequent contributions to open-source code.
- Facilitated lab sessions on popular software testing tools, enabling students to validate and verify real-world software applications.
- Stayed updated with the latest industry standards and practices in V&V, ensuring course content remained relevant and in-line with current software engineering challenges.

## Senior Software Engineer

QuantSoft

10/2018 - 04/2023

London, United Kingdom (Remote)

Azure, ASP.NET Core, Python, PineScript

### Contributions

- Developed tools to monitor cryptocurrency volatility using .NET, helping traders make informed decisions.
- Architected a grid trading bot using the Proto.Actor framework, integrating hyperparameter optimization, tick-level backtest simulation, and comprehensive risk management strategies.
- Managed the Azure Infrastructure as Code for the grid bot using Terraform, ensuring resources were secure by cutting off public access and utilizing secure private endpoints; followed Terraform best practices for modular infrastructure setup.
- Introduced feature flag management for strategic and smart feature deployment.
- Developed TradingView indicators using Pine Script v5 to visualize Supply/Demand Zones with clear zone strength, Market Structure, Order Blocks that often precede significant price shifts, Imbalance Zones & Session Timezones. These indicators were developed as part of the Smart Money Concept (SMC).
- Engaged in candidate interviews, focusing on technical competence. Presented complex code snippets, prompting candidates to identify bottlenecks such as race conditions and demonstrate effective problem-solving.
- Revamped company's website for better online presence and enhanced user experience.

## System Administrator

"Angel Kanchev" University of Ruse

09/2018 - 02/2023

### Contributions

- Designed and implemented a .NET account parser, automating student account creation by processing CSV exports from the e-Student system, eliminating manual entry.
- Configured Windows Server 2019 with mandatory-based profiles, and established dedicated organizational units for students and faculty, adapting configurations to meet the university's unique operational demands.
- Integrated a pre-existing Samba file server with the newly configured Windows Server 2019 using winbind. This kept student data in place and also provided a central device for teachers to efficiently share resources with students.
- Served as the go-to person for IT help for staff and students, quickly fixing problems and making sure everything ran smoothly.
- Enhanced remote connectivity by refining the VPN infrastructure.