

*Scalable Architectures, Cloud Development, Performance Optimization, Innovative Solutions*

## PROFESSIONAL SUMMARY

Accomplished software engineer with 10 years of experience specializing in backend development, scalable system design, and performance optimization. Proven success in leading cloud migration initiatives, enabling systems to handle 50x data bursts with minimal resource overhead while maintaining optimal performance. Driven by a commitment to continuous growth and staying at the forefront of emerging technologies in the software industry.

## AREAS OF EXPERTISE

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|---------------------------|------------------------------|-----------------------------|-------------------|
| ✓ Backend Development     | ✓ Microservices Architecture | ✓ Distributed Systems       | ✓ Database Design |
| ✓ Scalable System Design  | ✓ Performance Optimization   | ✓ Event-Driven Architecture | ✓ Code Review     |
| ✓ SQL and NoSQL Databases | ✓ Kafka/RabbitMQ/SQS         | ✓ Kubernetes/Docker         | ✓ Refactoring     |
| ✓ .Net / C#               | ✓ Python                     | ✓ C++                       | ✓ Node.js         |

## CAREER HIGHLIGHTS

**Scalable System Redesign:** Designed a scalable system that enhanced performance and reduced reliance on SQL Server by replacing procedures with scalable, scale-out solutions.

**Multithreaded Data Processing:** Developed a high-performance multithreaded solution to process massive data volumes, enabling real-time anomaly detection for automated car theft recognition.

**Agile Cloud Deployment System:** Developed an OOP-designed system that revolutionized feature deployment to the cloud, becoming the team standard.

## PROFESSIONAL EXPERIENCE

### Senior Software Developer Bariks, Sderot

11 / 2023 – Current

Hired by Bariks, a health industry start-up, to take on responsibilities including maintaining and enhancing backend and embedded system code, adapting APIs for frontend collaboration, and stepping into a critical development role to ensure seamless product progression.

- Quickly mastered the event-driven architecture to resolve critical issues and implement enhancements, improving system performance and reliability without external guidance.
- Developed an event-driven system utilizing a diverse technology stack, including C#, C++, Python, Node.js, MySQL, and Docker, to deliver scalable and efficient solutions.
- Collaborated closely with the frontend team to adapt and enhance APIs for current needs and future scalability, proactively identifying and mitigating potential issues to ensure seamless integration and functionality.

## PROFESSIONAL EXPERIENCE CONTINUED

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### **C++ Software Engineer**

01 / 2022 – 11 / 2023

**Dell, Beer-Sheva**

Hired by Dell EMC, a leading data storage company, to enhance product features, develop extensive tests, and maintain the existing software by resolving critical bugs.

- Optimized the performance of a backend storage solution by leveraging a daily technology stack including C++, Python, Git, and Jenkins to enhance system efficiency and reliability.
- Developed a feature to analyze and identify system components contributing most to data compression, optimizing performance insights for big data storage solutions.

### **Senior Backend Engineer**

05 / 2020 – 01 / 2022

**Intercontinental Exchange, Tel-Aviv**

Hired by Intercontinental Exchange to contribute to the migration of an on-premise market data processing system to the AWS cloud, enhancing it with cloud-specific features to support traders in making optimal deals.

- Appointed to lead the cloud architecture design for the system following the success of a proof of concept that enabled a microservice to achieve scalability and flexibility, setting a standard for future deployments.
- Developed scalable solutions using C#, Python, Redis, RabbitMQ, Kafka, Docker, Kubernetes, Git, Jenkins, AWS ECS, AWS Lambda, AWS CDK, and other AWS services to enhance system performance and reliability.
- Developed a proof of concept for cloud deployment and resource allocation, leveraging an OOP design, delivering a highly scalable and straightforward solution that became the department-wide standard for cloud operations.
- Migrated a challenging microservice to the cloud, leveraging Docker and Kubernetes technologies to achieve flexibility and scalability for high-demand scenarios; took full ownership of its development, deployment and maintenance.
- Redesigned a critical on-premise microservice utilizing Redis to support multiple concurrent instances working with a RabbitMQ queue, eliminating it as a single point of failure, enhancing system resilience and scalability.

### **Backend Engineer**

12 / 2018 – 5 / 2020

**Shieldox, AKA Cognii, Tel-Aviv**

Hired by Shieldox (Cognii), a cybersecurity start-up, to assist the development team leader with architecture and design issues while taking full responsibility for the product's backend, leveraging expertise in mathematical logic.

- Developed and optimized the product's data processing logic, strategically selecting and implementing cloud resources such as SQL servers, scalable microservices, and lambda functions to enhance performance and cost efficiency.
- Developed and maintained systems using a daily tech stack of C#, Node.js, SQL, Redis, MongoDB, Git, and Azure cloud services to deliver efficient and reliable solutions.

### **Software Engineer**

10 / 2014 – 12 / 2018

**Ituran (Pelely) Azur**

Hired by Pelely, a start-up later integrated into Ituran, to take charge of the product's backend, deliver rapid customer-driven features, enhance performance, and develop innovative solutions for complex requirements.

- Designed and developed a data-driven anomaly detection system for vehicle behavior, enabling an automated car theft prevention mechanism that accounted for 20% of thefts caught in 2018.
- Developed and maintained diverse features using a daily tech stack of C#, MS SQL, JavaScript, Elasticsearch, and RabbitMQ to ensure robust and efficient system functionality.
- Redesigned the caching system to implement a scalable solution with minimalistic SQL queries, reducing database dependency, significantly enhancing overall system performance, and vastly improving report generation speed.
- Designed and implemented database architecture to support big data storage, developing optimized procedures for rapid data insertion and instant retrieval to enhance user experience.

## EDUCATION

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<b>Ph.D. Mathematics</b> Ben-Gurion, <i>Beer-Sheva</i>	2012
<b>M. Sc. Mathematics</b> Ben-Gurion, <i>Beer-Sheva</i>	2006
<b>B. Sc: Mathematics and Computer Science</b> Open University, <i>Israel</i>	2002

## PUBLICATIONS

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- "**High-order roots of transformations of the circle group**", I.Goldstein Indag. Mathem., N.S.,17(3), 361-371. (2006)
- "**The Avalanche principle: From joint to averaged joint spectral radius**", C. R. Math. Rep. Acad. Sci. Canada ,vol 28 (4) 2006,
- "**Extremes of Compound Poisson Processes**", Probability and Mathematical statistics (2009)
- "**Asymptotic subword complexity of fixed points of group substitutions**", Theoret. Comput. Science, 410 (2009)
- "**On the D0L Repetition Threshold**", RAIRO – Theoretical Informatics and Applications 44 (2010)
- "**The avalanche principle and some deviation probabilities.**", C. R. Math. Acad. Sci. Soc. R. Canada ,vol 32 (2010)
- "**Subword Complexity of Uniform D0L words over finite groups**", Theoret. Comput. Science 412. (2011)

## WEBSITE

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[Ilya Goldstein website](#)