

Ivan Nikitin

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Summary

Experienced software engineer specializing in building robust backends for systems with critical up-time requirements. Previously published academic work on applying concurrent programming language techniques to TCP, showcasing expertise in networked systems. Passionate about developing resilient, reliable software to tackle complex challenges.

Education

University of Glasgow

BSc (Hons) Computer Science

Sept 2018 – Jun 2022

- Honours of the First Class (1:1)
- Specialism in Parallel and Distributed Systems
- Final year dissertation focused on analysing the QUIC stack as a transport layer protocol for MQTT in hardware-constrained IoT devices.

Experience

Software Engineer

Motorola Solutions

Glasgow, UK

May 2024 – Present

- Develop and maintain police safety and response applications as part of the Cloud Services team for the Responder product using Java Spring Boot (JDK 18/21).
- Implement and optimize behaviour-driven tests with Python and the Behave framework.
- One of two lead developers on a critical real-time service leveraging websockets and the Akka actor framework to deliver real-time data to client devices. As part of this solely designed and implemented a custom Socket.IO library to support the concurrent communication requirements of the service.
- Develop and maintain several UIs used by internal teams in Angular 18 using TypeScript.
- Utilise Azure DevOps and Github actions for CI/CD pipelines and deploy solutions.
- Experienced with Azure services such service bus, notification hub, Cosmos DB, key-vault and Blob Storage.
- Lead the development of a testing framework for Elastic Watchers, ensuring robust on-call alert systems.
- Serve as team's SRE Champion, promoting practices such as incident management, chaos engineering, automated error detection, and proactive alerting.
- Manage incident response as part of the on-call rotation, resolving critical issues using PagerDuty.

Research Student

Glasgow University

Glasgow, UK

Oct 2022 – May 2024

- Led work on concurrency and communication theory to improve the network protocol standardisation process.
- Combined my knowledge of protocols at the transport layer such as TCP and QUIC, and my knowledge of formal methods to ensure safe and inter-operable protocol implementations.
- Built the first session-type based implementation the core TCP state machine in Rust. (See [code](#) [↗](#)).
- Supervised follow up work and wrote publication published in the proceedings of PLACES 2024. (See [paper](#) [↗](#).)

Research Intern

Huawei

Edinburgh, UK

Jun 2021 – Sep 2021

- Worked on a team responsible for the execution engine of a graph database that was implemented in the Rust programming language.
- Solely designed and developed lock-free versions of a roaring bitmap and other concurrent data structures that were used in the engine.
- Solely created bench-marking tools to assess the realistic the speed of unions, intersections, insertions, deletions and updates on the concurrent data structures.
- Increased the efficiency of all operations by approx. 200% compared to the existing HashSet implementation.

Software Engineer Intern

Amazon

Berlin, DE

Jun 2021 – Sep 2021


- Designed and implemented a system to automate the scheduling of campaigns on the Amazon gifting page across all regions and locales.
- Developed the backend API in Kotlin using the spring boot framework and various AWS services, and the frontend in React.
- Reduced the time needed to schedule a marketing campaign from several weeks to a day.
- Responsible for setting up and managing my project's deployment pipelines including the final stages of deployment into live production environments.

Software Engineer Intern

Autodesk

Birmingham, UK

Jun 2020 – Sep 2020

- Devised a wireless method of sending files directly to a 3D printer from within Autodesk's slicing software by Developing an extension.
- Demoed to principal engineers in the field and technical consultants working with FFF at Autodesk, receiving overwhelmingly positive feedback.
- The extension is now deployed to customers on the Autodesk store and still maintained internally.([See extension](#) .

Extracurricular

GTA - University of Glasgow

- Responsible for overseeing groups of 60-100 students during laboratories, answering questions, supervising group projects and guiding the learning process.
- Marked various courseworks and exams which included verifying non-standard answers and providing detailed feedback on students' solutions. Invigilated in-lab exams.
- Responsible for assisting with course materials for computer science fundamentals, fundamentals of programming languages, functional programming in Haskell, and systems development in Python and Java.

Cypriot National Guard - Military Service

- Served in the infantry division stationed at the border, ensuring the security and defence of a highly sensitive area.
- Executed border patrol operations and maintained readiness by conducting regular drills, inspections, and defensive strategies in compliance with military protocols.
- Collaborated with team members to maintain a state of battle readiness, including the upkeep of equipment, fortifications, and operational logistics under high-pressure conditions.

Technologies

Languages: Java, Python, Rust, JavaScript, C++, C, Go, Kotlin.

Technologies: Springboot, Kubernetes, Docker, Azure, AWS, Elastic/Kibana, Behave, Github Actions