Andrew **Barchuk**

SOFTWARE ENGINEER

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"The direction we're heading is more important than where we're standing now."

Summary ──────────────────────────────────────

A software engineer with more than 8 years of professional experience focusing primarily on building backend services. The particular areas of interest include *distributed systems*, *concurrency*, *scalability and performance*, *monitoring and observability*. Passionate about constantly improving the way we build systems, deepening my understanding of technology, optimizing software delivery and developer productivity, always looking for opportunities to improve.

Skills and technologies ──────────────────────────

programming	Java, Rust, Scala, Go, C++, Python, JavaScript, Bash
data storage	Kafka, ZooKeeper, Cassandra, Spanner, PostgreSQL, MongoDB
software design	software architecture and design patterns, microservices, CQRS; algorithm analysis and implementation, concurrency
web	HTTP and design of RESTful APIs, WebSockets, understanding of underlying networking stack (TCP, UDP, DNS)
performance	profiling and optimization: heap analysiz, CPU sampling, JVM GC, benchmarking, load testing
testing	TDD practitioner, JUnit, Mockito, property-based testing
DevOps	Kubernetes, Docker; AWS and GCP clouds; monitoring (Prometheus, Grafana, distributed tracing); Unix toolset, Linux administration, ZFS
security	securing APIs, OAuth, symmetrical/asymmetrical cryptography, GPG
languages	English, German (A2), Ukrainian, Russian

Experience ──────────────────────────────────────

Zalando   *Berlin, Germany*
SENIOR SOFTWARE ENGINEER, CHECKOUT   *Oct. 2020 - Present*

- Scala, REST, Cassandra, DynamoDB, Kubernetes, AWS
- Deal with performance and reliability problems; 24/7 on-call duty. Participate in shaping the newly formed team. Tackling technical debt. Migration from Cassandra to AWS DynamoDB.

Revolut   *Berlin, Germany*
SENIOR SOFTWARE ENGINEER, OPEN BANKING   *Jun. 2020 - Sep. 2020 (4 months)*

- Data synchronization reliability, transaction enrichment; Java, PostgreSQL, Spring

Google   *Zurich, Switzerland*
SOFTWARE ENGINEER, YOUTUBE CHANNEL MEMBERSHIPS   *Jul. 2018 - Mar. 2020 (1 year, 9 months)*

- Subscription based, user supported YouTube alternative monetization (C++, Spanner, PubSub, CQRS, Stubby). Projects: iOS payments, optimizing channel members retrieval latency (100x for large channels), pricing levels.
- 20% project: Renaming of symbols in object files (ELF, Mach-O, PE/COFF) in Rust for Mundane cryptographic library (`https://github.com/google/mundane`).

Tink   *Stockholm, Sweden*
SOFTWARE ENGINEER, CORE PLATFORM   *Oct. 2016 - Jun. 2018 (1 year, 8 months)*

- Core transaction processing platform development (Java and Go, Cassandra, MySQL, Kafka, ZooKeeper, Elasticsearch, AWS, Prometheus, Grafana, Kibana, SaltStack provisioning, Terraform-defined declarative infrastructure). Projects: up/down scaling of transaction processing, driving movement towards microservices, continues delivery pipeline, improving transaction processing performance, advocating for testing, working with infrastructure closely.

Playtika   *Kyiv, Ukraine*

Java Developer, infrastructure services   *Mar. 2016 - Oct. 2016 (8 months)*

- Service for messages delivery via WebSockets to the end users (Spring Boot, Apache Kafka, Couchbase).
- Facebook ad audiences management service: in memory processing of large amounts of data (gigabytes) and integration with Facebook Marketing API (Spring Boot, HDFS, Apache Kafka.

Yandex   *Kyiv, Ukraine*

Software Engineer, movie platform   *Apr. 2014 - Mar. 2016 (2 years)*

- Backend development for integrating kinopoisk.ru (movie catalogue website) with Yandex services. Working on high load (order of 10K QPS) system based on Java 8, Spring Framework, Jetty, MongoDB and MySQL. Designing (public and internal) REST APIs. Working on authentication and authorization. Load testing, performance optimization, JVM profiling. Facilitating team TDD adoption. Participating in software development best practices promotion and implementation as a team. Mentoring of new project members.

DIO-Soft   *Kyiv, Ukraine*

Java Developer, State Street Bank   *Nov. 2013 - Mar. 2014 (5 months)*

- Development of a backend for financial data monitoring service (Restlet Framework, Spring DI, JAXB, Sybase, SQL, JDBC, Java concurrency, TDD, JUnit, Mockito, integration testing).

NetCracker   *Kyiv, Ukraine*

Junior Software Engineer, system integration   *Mar. 2013 - Oct. 2013 (8 months)*

- Client integration projects (Java, SOAP web services, PL/SQL, JSP, JavaScript).

Open source contributions

Mundane, Rust cryptographic library (`https://github.com/google/mundane`)

Build system improvements, ELF/Mach-O,COFF manipulation   *2019*

- Reimplement listing of exported symbols in object files in Rust, remove dependency on Go from build system.
- Replace two-step build process with in-place symbol renaming (ongoing).

goblin, Rust object file parsing library (`http://github.com/m4b/goblin`)

Mach-O, and library archive parser improvements   *2019*

- Prevent parser crashes on certain Mach-O files.
- Implement parsing of Windows-specific library archives.
- Implement detection of static library archive type.

TestNG, Java testing framework (`http://github.com/cbeust/testng`)

Improve consistency of array comparison   *2015*

- Make sure arrays are compared in the same way in all assertions.

Talks

Distributed coordination: ZooKeeper and Chubby   *Zurich, Switzerland*

Google internal   *2018*

Distributed Locking with MongoDB   *Kyiv, Ukraine*

Yandex Java Party   *2015*

Education

Igor Sikorsky Kyiv Polytechnic Institute   *Kyiv, Ukraine*

Bachelor of Software Engineering   *2010-2015*