



Personal information

Surname(s) / First name(s)	Shafeev, Roman
Address(es)	Saint-Petersburg, Russia
Email(s)	r.a.shafeev@yandex.com, telegram: @rshafeev
Nationality(-ies)	Russian
Date of birth	Feb 14 1990
Gender	male

Work experience

Date	June 2022 – now
Company	MTS AI
Position Held	Solution Architect
Roles	<ul style="list-style-type: none"> • Architecture Design • Solution Prototypes Building • iterative design architecture of the Audiogram product for speech synthesis and recognition (TTS/ASR) and the Natural Language Processing Platform to build intelligent virtual assistants. • designed a technical solution for asynchronous retransmission of chatbot communication dialogues with the user into the speech analytics module in the NLP Platform product • implemented observability distributed tracing of software components of the Audiogram product • designed a solution for horizontal scaling of API components and agents responsible for client communication with triton servers in the Audiogram product • designed the transition from the SOA to the MSA model in the Audiogram product.
Key Achievements	
Technical Skills	<ul style="list-style-type: none"> • Development: python, go • Services Bus: Apache Kafka • Databases: Postgresql, ClickHouse, Redis • Machine Learning: triton server, rasa
Date	February 2021 – February 2022 / 1 year 1 month
Company	RingCentral
Position Held	Solution Architect (Analytics)
Roles	<ul style="list-style-type: none"> • Architecture Design • Solution Prototypes Building

Key Achievements

- designed technical solution to build 'Quality as Service' of Customer-Facing Analytics for webinars with 10k+ attendees. The Analytics System consumes telemetry of RingCentral video meetings from RingCentral Data Points and from client applications (e.g. HLS Players) to build scoring analytics of meeting quality to help customer admins determine the cause of failure of media streaming.
- designed technical solution to build 'Webinar Marketing' Analytics. The Analytics System collects any actions of the attendee starting from the moment of registration in the webinar and ending with the completion of his participation in the webinar to build funnel trends for Marketers.
- designed technical solution and made prototype to async generation and download Analytics Reports from RingCentral Analytics Portal.
- designed technical solution to reorganize RingCentral Analytics System to ensure GDPR and Schrems II Compliance and build regional clusters for EU and APAC.
- made an audit of architectural documentation and actualized system and functional specifications of RingCentral Analytics System; built py-tool which generate draw.io interactive architectural diagrams from configuration files and applications artifacts and publish them into Confluence using Confluence API and integrated him to GitLab CI.

Technical Skills

- Development: scala, sbt
- Cloud Computing Services: GCP k8s, GCP Pub/Sub, Segment
- Services Bus: Apache Kafka, Temporal.io
- Databases: Cassandra, ClickHouse, rocksdb, lucene

Date

Sep 2019 – February 2021 / 1 year 6 months

Company

RingCentral

Position Held

Team Lead (Telephony - Infra)

Roles

- Team Leading & Scrum Master
- Projects Roadmap Planning
- Architecture Design
- C++ Developing

Key Achievements

- built Development Process based on Self Agile methodology and increased responsibility for team actions, outcomes and delivers on commitments. We have reached average Team Work Efficiency of more than 98
- My team migrated legacy Kernel Telephony Service which has a lot of win-specific code (winapi, com objects, mfc, etc.) from Win to Linux Platform.
- My team refactored legacy Kernel Telephony Service using EDA architecture concepts to simplify the internal architecture of the service and migrate to an asynchronous model of communication between isolated service components.

Technical Skills

- Development: c++11, cmake, boost, stl, protobuf
- Orchestration: systemd
- Services Bus: Apache Kafka
- Databases: Oracle

Date

March 2018 –July 2019 / 1 year 5 months

Company

ARRIVAL LTD

Position Held

Product Lead (Connected Vehicle Cloud)

Roles

- Team Leading & Scrum Master
- Product Roadmap Planning
- Architecture Design

Key Achievements

- formed a team with 10 members (2 c++ backend developers, 2 py developers, 2 frontend developers, devops, ux designer, 2 QA eng.) • My Team built the Connected Vehicle Cloud which is based on MSA Architectural concepts and launched new innovative SaaS solutions for the automotive world: Remote Access and Remote Control of Vehicle CAN/ETH Buses. It became possible to receive from CAN and Automotive Ethernet Buses any sensors data of the vehicle in real-time and visualize them in Cloud Engineering Portal.
- My Team built SaaS Remote Diagnostics Tool to help of support engineers to determine the cause of SW/HW failures as soon as possible when they have remote access to the vehicle only.
- My Team built the OTA Update Service to upgrade applications and firmware of vehicle i/o modules, HMI and linux-based automotive systems.
- My Team designed and implemented a new automotive protocol for *vehicle ↔ cloud* communications. The protocol has the following properties: multi-streaming per single tcp connection, streams prioritization, datagrams compression, data tls encryption, guarantee delivery, saving traffic when transmitting telemetry (only telemetry signal changes are transmitted).

Technical Skills

- Connected Vehicle Development: c++11, cmake, nghttp2, stl, protobuf
- API: python3, tornado, sqlalchemy, WAMP
- Orchestration: k8s+terraform+helm, docker compose
- Cloud Computing Services: GCP k8s
- Services Bus: RabbitMQ Cluster
- Databases: PostgreSQL, InfluxDB

Date

February 2017 – March 2018 / 1 year 2 months

Company

StarLine

Position Held

Product Lead (Insurance Telematics)

Roles

- Team Leading & Scrum Master
- Product Roadmap Planning
- Technical Integration & Communication with Telematics Partners
- Architecture Design
- Python API Backend Developing

Key Achievements

- My Team designed & developed Pub/Sub API for b2b integration with Telematics Providers and Insurance Partners to transfer vehicles telemetry to their systems in real-time mode.
- My Team implemented 'the driving style assessment' feature to calculate driving style score by a selected date-time period in real-time mode.
- My Team implemented the 'insurance telematics' b2b product to calculate insurance score and crash detection/reconstruction based on raw data of vehicle accelerometer which collected from the vehicle on the cloud side.

Technical Skills

- Development: python3, tornado, sqlalchemy

Date

July 2015 – February 2017 / 1 year 8 months

Company

StarLine

Position Held

C++/Python Backend Developer

Roles

- C++ Backend Developing
- Python API Backend Developing
- Technical Design
- Applied Mathematics Research

Key Achievements	<ul style="list-style-type: none"> • designed and implemented MSA Architectural concepts for Telemetry Monoliths Server Decomposition using RabbitMQ as Services Messages Bus. • designed and implemented remote communication between client applications(mobile apps, web portal) and connected vehicles through <i>client ↔ api ↔ platform ↔ vehicle</i> on Connected Vehicle Platform side using redis pub/sub channels. • developed backend micro-services with horizontal scaling to receive and to collect vehicle's telemetry of more than 300K connected vehicles. • designed and implemented a heuristic algorithm to solve 'anti-star' problem to filter noise and broken track points in real-time.
Technical Skills	<ul style="list-style-type: none"> • Connected Vehicle Development: c++11, cmake, poco, stl, libevent, protobuf • API Development: python3, tornado, sqlalchemy • Services Communication Bus: RabbitMQ Cluster (via SimpleAmqpClient for c++ / via pika for python) • Databases: redis (via hiredis), mysql (via mysqlcppconn), oracle (via occi)
Date	September 2013 – June 2015 / 1 year 10 months
Company	NTU "KhPI", Ukraine
Position Held	Researcher of the Department of Computer Mathematics and Mathematical Modeling
Roles	<ul style="list-style-type: none"> • Applied Mathematics Research • Conducting laboratory and practical classes of C++ programming
Key Achievements	<ul style="list-style-type: none"> • designed and implemented matlab application which allows finding the best productive supply for each transformer with minimal losses on the power transformers in Dushanbe (Tajikistan). • developed a vehicle routing java framework that uses specialized metaheuristic algorithms to calculate an optimal solution of the different classes of the static and dynamic vehicle routing problems.
Technical Skills	<ul style="list-style-type: none"> • Language: C++, Java • Math Tools: Matlab
Date	July 2011 – November 2011 / 5 months
Company	Hamburg University of Technology-TUHH
Position Held	Software Developer
Roles	<ul style="list-style-type: none"> • Applied Mathematics Research • C++ / Java Developing
Key Achievements	<ul style="list-style-type: none"> • built model which follows a rigorous development process framework, where model validity is ensured by using Supply Chain Operations Reference as theoretical process framework using Anylogic Modeling Platform. An agent based simulation platform is presented for generic supply chain modeling adding flexibility and configurability over existing models. • developed UI-tool which allows to design delivery routes between the points of the delivery chains and export them in .accdb format to have the ability to use them in Anylogic into supply chain model.
Technical Skills	<ul style="list-style-type: none"> • Modeling Tools: Anylogic 6.6 • Development: C++, WinAPI/MFC, Visual Studio 2008, OpenStreetMap
Personal skills and competences	
Mother tongue(s)	Russian
Other language(s)	English

English

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
B2 Independent user	C1 Proficient user	B2 Independent user	B2 Independent user	B2 Independent user

^(*) Common European Framework of Reference (CEF) level

Actual Technical skills and competences

• **Operating System Experiences**

Linux (debian, ubuntu, centos)

• **Programming Languages**

C++ 11+, Python 3, SQL, PL/pgSQL, Java / Scala(basic level)

• **Database Management Systems**

PostgreSQL, Oracle, Redis, InfluxDB, Cassandra, ClickHouse (basic level)

• **Python technologies & frameworks**

Tornado, aiohttp, sqlalchemy, WAMP

• **C++ technologies & frameworks**

cmake, STL, libevent, nghhttp2

• **Data Streaming & Services Bus**

RabbitMQ, Apache Kafka, Temporal.io

• **Orchestration & Containerization**

k8s, docker compose, docker swarm

• **Cloud Computing Services**

GCP k8s, Google Pub/Sub

• **Infra & CI tools**

Jenkins CI, Gitlab CI, Ansible, Terraform

• **Development tools**

PyCharm, CLion, IntelliJ Idea

• **Version Control Systems**

Git

• **Other skills**

Mathematics: MatLab, R Studio

Simulation: Rational Rose, Anylogic

SOURCE CODE

Source code, demonstration video and documentation of my projects:

<https://github.com/rshafeev>

Education and training

Place and Date

Specialty

Title of qualification awarded

Thesis theme

National Technical University "Kharkov Polytechnic Institute", Ukraine, 2013 – 2016

Mathematical modeling and computational methods

passed PhD minimum, successful completion of postgraduate study

Development of mathematical models and methods to solve the Dynamic Vehicle Routing Problem with uncertain input parameters

Place and Date

Title of qualification awarded

National Technical University "Kharkov Polytechnic Institute", Ukraine

Computer Mathematics and Mathematical Modeling department, 2011 – 2013

Master's degree in Applied Mathematics with excellence

Place and Date

Title of qualification awarded

Principal subjects covered

National Technical University "Kharkov Polytechnic Institute", Ukraine

Computer Mathematics and Mathematical Modeling department, 2007 – 2011

Bachelor's degree in Applied Mathematics with excellence

Mathematical Analysis

Discrete Mathematics
 Programming (C,C++)
 Probability Theory and Mathematical Statistics
 Object Oriented Programming
 Numerical Methods
 Optimization Methods
 Logical Algorithms and Artificial Intelligence Systems
 Control Theory
 Development of Information Systems (Java, IDEF, Web 2.0)
 Computer Simulation
 Distributed Information Systems(Oracle)
 Actuarial Mathematics

PUBLICATIONS

- R. Shafeev. Investigation of tuning parameters of Tabu Search algorithm and its modification for solving the static Routing Courier Delivery Problem. Kharkov NTU "KhPI" , 2016, 18 p.
- Lyubchik L.M., Kolbasin V.A., Shafeev R.A. Nonlinear Signal Reconstruction based on Recursive Moving Window Kernel Method. / IDAACS, Warsaw, Poland, 2015, 6 p.
- R. Shafeev. A new metaheuristic algorithm for Solving the Transportation Problem with Time Constraints / L. Lyubchik // Vestnik NTU "KhPI". – Kharkov: NTU "KhPI", 2013. – No3 (977). – p. 35–39.
- Shafeev R.A. A Development of SaaS service to solve dynamic vehicle routing problem / System analysis and information technologies: SAIT, Kyiv, 2013.
- R. Shafeev. Relationship between the Vehicle Routing Problem with Time Windows and the Assignment Problem. // Theoretical and Applied Aspects of Cybernetics. – Kiev: Bukrek, 2012. – p.145–149.

- May 2013, I presented the research work, devoted of development of client-server information system for solving the Dynamic Vehicle Routing Problem at the XV International Conference on Science and Technology "System Analysis and Information Technologies" at the National Technical University "KPI", Kiev, Ukraine.
- March 2012, The winner (1'st place) of the all-Ukrainian competition of the research student works, section "Informatics and Cybernetics", Vinnytsia, Ukraine.
- September 2011, participant of the International Conference of Logistics at the Hamburg University of Technology, Hamburg, Germany.
- October 2010, I presented the research work, devoted to effects of electromagnetic fields on the complex biological objects at the Vth International conference "Environmental aspects of the technological security of the regions" at the National Automobile and Road University, Kharkov, Ukraine.
- May 2010, I presented the research work, devoted to numerical simulation of the motion of celestial bodies at the XII International Conference on Science and Technology "System Analysis and Information Technologies" at the National Technical University "KPI", Kiev, Ukraine.
- May 2007, The winner (2nd place) of the third stage of the all-Ukrainian competition of research carried out by the students-members of the Ukrainian Small Academy of Sciences, section "Computer networks, databases and data banks", Kiev, Ukraine.
- December 2006, The winner (1nd place) of the second stage of the all-Ukrainian competition of research carried out by the students-members of the Ukrainian Small Academy of Sciences, section "Computer networks, databases and data banks", Zaporozhye, Ukraine.

Additional information

GRANTS

Grant of Government of Ukraine, 2010–2011.

Grant of the "DAAD-East European Partnership Exchange" funding framework between "National Technical University" (Kharkov, Ukraine) and "Hamburg University of Technology-TUHH" (Germany). During the internship, I worked as a team member, which developed Supply Chain Management project, Hamburg (Germany), July – October 2011.