




# Sergei Shilko

Head of Engineering

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 English, Russian, German, Polish



## BACKGROUND



### ABOUT

IT Professional with 15+ years experience in backends, mobile APIs and AWS platform. Recently i was working at Tandem: an online language exchange app to learn languages, chat, video call, book tutors, get certified in language and find new friends.



### WORK EXPERIENCE

- Head of Engineering at Tandem Language Exchange App [www.tandem.net](https://www.tandem.net),  
Jan, 2016 - Present

Support backend code & infrastructure, grow & manage team, more analytics, long-term goals. Ensure that the business is capable of building and running software at scale

- Scaled backend infrastructure from 1000 RPM to 80000 RPM, from 100kDAU to >1mDAU and <50ms API response time
- Scaled backend capacity from 1000's of users to >15M users
- Applied cost savings plans and utilized AWS Spot instances to reduce costs by 32%
- Hired multiple AI/ML, Data, Backend and devOPS engineers.
- Migrated monolithic backend application into 15 independent services
- Introduced Golang & AWS Keyspaces/Cassandra, DynamoDB for high-load group chat application storage
- Promoted AWS Best Practices, executed AWS Well-Architected framework together with AWS solution architects
- Managed >40 EC2 servers across 3 AWS regions, migrated from AWS EC2 Classic to AWS VPC
- Updated codebase from PHP5 to PHP 7.4, Go 1.14 Docker 19, PHPUnit 9
- Supervised development of serverless microservices in Java/Kotlin/Golang & DynamoDB
- Split monorepository into >30 separate repositories with separate CI/CD
- Executed multiple refactoring projects in code, infrastructure, raw storage and databases
- Maintained backend roadmap and technology radar [tech-radar.opensource.tandem.net](https://tech-radar.opensource.tandem.net) based on ThoughtWorks
- Improved user retention analytics, subscriptions and overall revenue tracking
- Updated realtime messaging server RabbitMQ, secured authorization, added 3rd websocket/MQTT browser client
- Added support for in-app purchase gifting, subscription hold, grace periods, geo-search.



- Increased application infrastructure and performance/APM monitoring automation and alerting via NewRelic
- Built full CI/CD pipeline on AWS Pipeline inc. Blue/Green deployments and AWS ASG/AutoScaling
- Improved China & SEA connectivity via transparent HAProxy, ICP/Hosting issues resolved
- Built internal business KPI, retention, engagement and revenue tracking systems
- Enforced PHPUnit & integration testing, code reviews & code style policies
- Migrated application services into containers (Docker)

Senior FullStack Software Developer at Tandem Language Exchange App [www.tandem.net](http://www.tandem.net) ,

Jun, 2013 - Jun, 2016 ⌚ 3 years

Mature backend solutions for audio/video (tele)communications software. Developed public API for mobile clients.

- Implemented public API for native mobile clients
- Refactored old MVP prototype codebase
- Launched first production release 1.0
- Celebrated first 50 users sign-up on GA and first promotions on iTunes
- Deprecated legacy on-premise hosting and migrated into AWS EC2-Classic
- Celebrated '2015 Most innovative app of the year' award (Apple iTunes)
- Implemented PHP framework with open-source components
- Reduced API response times from  $\geq 2000$ ms to  $\sim 100$ ms
- Implemented critical app functionality: in-app messenger, community userfeed, email-reminders, user search and more

Lead Software Developer at Yangutu LLC,

Nov, 2011 - Nov, 2012 ⌚ 1 year

Working on web based social network.

- Added API for supporting external 3rd party Game-platform add-on's
- Added AMF Flex/ActionScript API Server for import/export of data to mobile platform
- Added Facebook, Instagram, VK and other social networks integrations
- Extended user data import and export API's

Software Engineer at eHarmony Inc [www.eharmony.com](http://www.eharmony.com) ,

Aug, 2008 - Sep, 2011 ⌚ 3 years 1 month

eHarmony Reporting and Management Tools for Risk Management team.

- Developed CMS/RMS Internal service from specification to manage and automate risks and fraud detection
- Working with sensitive client payment information
- Extended CMS/RMS service with flexible and configurable multi-role authentication system for different regions
- Added support for localization and translation of CMS/RMS
- Added analytics and audit tools for tracking and optimizing team (users or the CMS/RMS) performance

Software Engineer at IponWeb [www.iponweb.com](http://www.iponweb.com) ,

Aug, 2007 - Sep, 2011 ⌚ 4 years 1 month

SOAP/Rest API for real-time AD Exchange platform - RightMedia

- Worked on SOAP-API for high-load real-time advertising platform at scale
- Heavily extended and rewrote existing functional test coverage, integrational e2e testing
- Covered many new edge cases in tests which lead to fixes in critical API parts

Software Engineer at Yahoo! [yahoo.com](http://yahoo.com) ,

May, 2008 - Mar, 2009 ⌚ 10 months

AD Exchange API - RightMedia

- Refactoring tests, code and documentation, working with remote Yahoo developers team. SOAP API. Perl. PHP5



## SKILLS

### AWS

EC2 ELB Lambda S3 RDS ElastiCache VPC CloudFront Route 53 API Gateway CodeCommit  
CodeBuild CodeDeploy CodePipeline CloudWatch IAM ECR Cognito Certificate Manager  
WAF & Shield SQS SNS Mobile Hub PinPoint WorkMail Organizations DynamoDB  
Secrets Manager

### Backend

PHP MySQL Redis Percona SphinxSearch ManticoreSearch Docker Beanstalkd RabbitMQ  
AMQP MQTT Puppet Nginx Git PHPUnit NewRelic APM HAProxy



## EDUCATION

Experimental psychology, MSc Psychologe Pädagoge, Grodnenski Dzjaržauny Universitet

Sep, 2005 - Sep, 2010

Elektrische Energietechnik (Power engineering), MSc Electrical Engineering, GGPEK Elektrotechnik College

Sep, 2000 - Sep, 2005



## AWARDS

AWS Certified Solutions Architect - Associate (SAA) , 3GV5K7KKC14Q17W1

Awarded on: Dec 13, 2018

Telc Deutsch B1 Zertifikat , 0503718

Awarded on: May 01, 2018

AWS Certified Cloud Practitioner , 3B28554BK2EQ1PSD

Awarded on: Nov 21, 2020



## INTERESTS

### Events

Belin - AWS Summit 2014, 2015, 2016, 2017, 2019 KubeCon + CloudNativeCon 2018, 2019

### Podcasts and Forums

Golang

### Reading

Management Agile Scrum Sci-Fi Fantasy Horror Clean Code TDD Architecting for the Cloud  
Best practices High performance IT novels Marketing and selling high-tech products  
Scalable and maintainable systems Algorithms Managing successful projects Building teams  
Software architect wisdom Isaac Asimov Robert Heinlein George Orwell Terry Goodkind Alan Kuper  
Tom DeMarco



## REFERENCES

Arnd Aschentrup Co-Founder & CEO at Tandem / [www.tandem.net](http://www.tandem.net)

Sergei is an outstanding engineer! We have worked together very closely for more than 7 years and during this time Sergei played a decisive role in Tandem's success. For example, Sergei built Tandem's complex, high-load backend application, infrastructure and API initially single-handedly, later leading, mentoring and developing our growing backend engineering team. Our backend serves more than 10 million community members with close to perfect uptime, high efficiency and performance across four separate client applications. Sergei always goes above and beyond the day to day responsibilities to solve to a broad spectrum of engineering and IT challenges, such as connectivity for our members in mainland China, building analytics infrastructure + tools and working with all teams to find the best solutions.

Mark Dalby Chief Technology Officer at Tandem / [www.tandem.net](http://www.tandem.net)