Aleksandr 'Sasha' Lopashev

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Work Experience

September 2023 - Present, Founding/Senior Engineer at Ventrilo.ai, Menlo Park, USA

Stealth Mode

August 2019 - September 2023, Staff Software Engineer at Indeed Inc., San Francisco, USA

Responsibilities:
- Creating knowledge base using AI toolchain (embeddings, prompt engineering) for internal engineering organization (OpenAI, LangChain, LlamaIndex)
- Building API platform based on GraphQL, Apollo Federation, and Service Mesh / Envoy (TypeScript, Gradle, Jenkins, GitLab CI/CD, AWS, Terraform, Spark, Java, Kotlin, Rust)
- Leading team of contractors to create a new backend service, fully integrated with existing systems to provide new capabilities on employer portal (Java, Kotlin, Gradle)
- Implementing new and adjusting existing client-facing products for enterprise clients on employer portal for better content management over job postings, ads campaigns, and candidates messaging (Java SE/EE, Kotlin, JavaScript, React, Python)

Key accomplishments:
- Built a chatbot (standalone and Slack integrations) to address internal customer requests
  - Indexed thousands of Confluence pages, Google documents, emails, and Slack threads using OpenAI embeddings
  - Using LangChain preparing prompts for GPT-4 to generate answers with references to relevant resources
  - Currently improving performance with migrating to the LlamaIndex stack
- Contributing to GraphQL Gateway internal platform
  - Supported migration and onboarding of 250 services to GraphQL stack and over 1000 API clients
  - Led continuous performance evaluation and improvements, currently able to support billions of daily requests and 40,000 peak RPS with over 600 globally distributed nodes
  - Co-piloted multi-stage intricate migration to Apollo Federation version 2
- Personally led migration to a new API Gateway product vendor (from Apigee Edge to Cloudflare)
  - Conducted feature research for all available solutions on the market
  - Prototyped solutions and performed performance and load testing
  - Participated in contract negotiations
  - Built end-to-end logging infrastructure
  - Resulted in $1M (80%) annual cost savings, improved reliability and performance

metrics, and richer telemetry
- Created important components designs
    - Data durability contracts (similar to [Microsoft](#)) fitting company's environment
    - Client fine-grained authorization system leveraging GraphQL DSL, OAuth, and Open Policy Agent's authorization DSL
- Contributing to various engineering organization initiatives
    - Participating in software/API design reviews
    - Multiple guilds membership: Java, API, GraphQL, Software Design
    - Outage investigations, mitigations, and postmortems
    - Establishing SWE practices in new teams: code / design reviews, knowledge sharing
    - Conducted over 300 technical interviews for SWE/TDM candidates: problem solving, system design, and code review
    - Innovating in automatically generated code capabilities - Open API specifications, system monitoring, SDKs
- Mentoring experience
    - Immediate team members as well as junior and senior engineers within organization
    - Interns, including [Ada Academy](#) graduates

February 2019 - August 2019, Staff Software Engineer at [Indeed Inc.,](#) Tokyo, Japan
February 2017 - January 2019, Senior Software Engineer at [Indeed Inc.,](#) Tokyo, Japan
August 2015 - January 2017, Software Engineer at [Indeed Inc.,](#) Tokyo, Japan

Responsibilities:
- Supporting and delivering new features to web crawler ecosystem for aggregating job postings from all over the Internet (Java SE/EE, JavaScript, Python)
- Improving automatic crawler rules repair tooling using heuristics and machine learning

Key accomplishments:
- Personally delivered crowdsourcing platform for human intelligence tasks
    - Collecting requirements, communicating with stakeholders
    - Holding system design review, prototyping, and writing documentation
    - Releasing it to the clients, onboarding new engineers
    - Resulted in reduction of thousands of hours saved, hundreds of thousands tasks completed, assisting in bringing over $10M in new customers LTV
- Supporting migration of crawling infrastructure to industry standard web browsers using [Selenium](#) and [Selenium Grid](#) (clustering solution)
- Preparing and consolidate data from various storages and services to enable data scientists to experiment and come up with ideas of fully automating aggregation pipeline
- Personal project of leveraging [publicwww.com](#) dataset for building websites classifier to generate leads for discovery system in the crawler, resulted in 750k positively identified websites
- Participating as an engineering lead in Indeed University 2017, [internal startup incubator](#) program to on-board new engineers and generate/test new ideas for business, acted as an interim manager for a cohort of 5 people

- Mentoring interns and junior team members, hosting internal tech talks and workshops about build tools, testability, web app technologies, conducting technical interviews for SWE/TDM candidates

May 2014 - July 2015, Software Engineer at [Yandex LLC](#), Moscow, Russia

Responsibilities:
- Developing and supporting web analytics tool [Yandex.Metrica](#) (Java SE/EE)

Key accomplishments:
- Whole support of [API component,](#) introducing new reports functionality
- Working closely with data backend counterpart team, contributing small fixes to now open source project [ClickHouse](#)
- Working closely with QA automation engineers to create automated regression testing of all [documented](#) API endpoints based on automatically generated [JSON schemas](#)
- Setting up thorough stress / load testing of beta versions before deployment, leveraging [Yandex.Tank](#) internal cluster
- Identifying bottlenecks, resolving performance issues, optimizing [ClickHouse SQL](#) queries

May 2013 - April 2014, Software Engineer at [Mail.Ru Games](#), Moscow, Russia

Responsibilities:
- Developing and supporting game mechanics of MMORPG ["Allods Online"](#) (Java SE, C++)

Key accomplishments:
- Developed several new game mechanics (abilities tied to distance between coupled in-game objects)
- Fixed client reported visual bugs which were in game for years (C++, Lua)
- Identified a bug with texture mapping for multiple matrix operations, causing numeric precision loss, fixed with simplifying to a single matrix multiplication
- Built unit testing harness for brand new project based on Unity Engine

September 2012 - May 2013, Software Engineer at [Mail.Ru Group](#), Moscow, Russia

Responsibilities:
- Developing and supporting site http://kino.mail.ru (previously http://afisha.mail.ru) about media, social events, and entertainment (Perl, MySQL)
- Developing import tool to load data from info providers (ticket purchases, showtimes, video content streaming)

Key accomplishments:
- Content variety expansion via adding support of new informational partners
- Led enablement of video streaming capabilities

- Updated movies and TV shows overall rating calculation
- Improved performance of batch import processing from hours to minutes

October 2009 - August 2012 (during attending university up until February 2012), Software Engineer at GE Money Bank Center of Excellence, [Mirantis, Inc.](), Saratov, Russia

Responsibilities:
- Developing and supporting helpdesk based on [OTRS]() (Perl, MySQL)
- Improving banking daily batch processing processing utility (Perl)

Key accomplishments:
- Created a custom events driven email sending system
- Added new functionality for automatic ticket resolution from shortcut links in email notifications
- Performed MySQL version updates and schema management
- Sped up batch processing utility to satisfy hard time constraints with multi fold increase in daily data volume

Education

Masters in Mathematics, [Computer Security and Cryptography Department](), [Computer Science and Informational Technologies Faculty](), [Saratov State University](), Saratov, Russia, 2012

Certifications / Lifelong Learning

- ML/AI
  - [Deep Learning Specialization]() by Andrew Ng
  - [Machine Learning with Python]() by IBM
  - [Scalable Machine Learning on Big Data using Apache Spark]() by IBM
  - [Convolutional Neural Networks for Visual Recognition: Stanford CS231n, Winter 2016]() by Fei-Fei Li, Andrej Karpathy, Justin Johnson on YouTube
- Computer Science
  - Algorithms ([Part I]() and [Part II]()) by Robert Sedgewick of Princeton University
  - [Kotlin for Java Developers]() by JetBrains
  - [Functional Programming Principles in Scala]() / [Functional Design in Scala]() by Martin Odersky
- Blockchain
  - [Bitcoin and Cryptocurrency Technologies]() by Princeton University
  - [Blockchain Specialization]() by University at Buffalo & The State University of New York
  - [Decentralized Finance: The Future of Finance Specialization]() by Duke University
  - [Blockchain and Money: MIT 15.S12, Fall 2018]() by Gary Gensler of MIT OpenCourseWare