

Denis Ryzhkov

Backend Architect

CRAFTING CODE WITH LOVE AND THOUGHT

Please see denisr.com - short version of this CV

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Principles

- Value for user
- [Keeping It Simple](#)
- [Don't Repeat Yourself](#)
- [Intrapreneurship](#)
 - Recent read: ["The Lean Startup" by Eric Ries](#)

Employers and Projects

- Nov 2017+ **Backend architect & innovation engineer at [FineTune](#)**
 - Responsibilities:
 - R&D, new products
 - proposing new ideas, requirements, flows, models
 - documenting, implementing most complex parts
 - reviewing PRs a lot, proposing fixes and improvements
 - answering questions, teaching and learning
 - Improved skills - and opensource created:
 - python: black, django, asyncio, graphql, graphene - [aiographql](#)
 - serverless: aws sam, fargate, chalice - [chalice-lambda-image](#)
 - aws: iam, ssm, s3, rds, vpc, elbv2, apigateway, ecs, route53, sagemaker
 - bash: shellcheck, aws cli - [binfra](#)
 - deploy: docker, kubernetes, kops, terraform
 - db: postgresql+jsonb, metabase, hasura
 - ai/ml: ecree, openai, sagemaker, tensorflow
 - integration: auth0, jira apps, chrome extensions, ims qti, ims lti sso
 - tdd: factory_boy, pytest
 - ci/cd: semaphoreci, circleci, github actions
 - dev tools: sentry, locust, swagger, quip, jira, slack, zoom, github, kitty+micro - [config](#)
- Feb 2014 - Oct 2017: **Backend architect at [Wakie](#)**
 - Created main frameworks and libs:
 - message queue - [mqks](#)
 - direct sockets - [dmks](#)
 - background events
 - controllable daemons
 - websocket api prototype
 - telecom adapter via [ami](#)
 - metrics etl with web ui
 - greenlet profiler - [gbn](#)
 - memory leak inspector - [mem_top](#)
 - notification on error - [critbot](#)
 - db adapters, [etc](#)
 - Proposed and done over 500 tasks:
 - development of frameworks
 - scalability and failover

- performance optimization
 - deep investigations
 - documenting flows
 - helping teammates
 - coding daemons
 - code review
 - devops
- Improved my skills in:
 - [python](#), its stdlib: multiprocessing, socket, etc
 - [greenlet](#), gevent, gevent-websocket, gipc, greenletprofiler, gbn
 - [memcached](#), twemproxy, pylibmc, pymemcache
 - [redis](#), redis-py, gearman, python-gearman, zeromq, zookeeper
 - [rabbitmq](#), puka, amqpy, nucleon.amqp, mqks
 - [mysql](#), mysql-python, umysql, pymysql, my4geks
 - [postgresql](#), psycopg2, pg4geks
 - [mongodb](#) cluster, pymongo
 - [voip](#), asterisk, dialplan, pyst2, pystrix, agi, fastagi, ami, ari, smpp
 - [aws](#), ec2, s3, route53, rds, awscli, boto, boto3
 - [linux](#), ubuntu, bash, sysctl, iptables, nginx, mercurial, git, supervisor
 - [etc](#): babel, graphviz, nltk, nodejs, nose, objgraph, requests
 - «Denis is one of the best developers I have ever met. He is open-minded, creative, smart and organized. It is amazing that all this can be combined in one person. Denis is good at solving complex challenges and he would always succeed if you give him enough time. He is a brilliant employee, team member and a friend.»
[Hrachik Adjamian](#), Founder and CEO at Wakie
 - «Denis is one of the best developers I worked with. Very structural and responsible approach to tasks. Quick delving into mechanics of unfamiliar, already implemented systems. Superb understanding of computer systems and modern ways of software engineering, both in architecture and tools. That's why he can design architecture of complex systems with horizontal scaling and implement it himself, using various tools (programming languages, databases, queues, caches, etc) depending on technical and business requirements. Rescued us in critical situations like downtime at night. Great work in team, always ready to help, teach and learn. Denis, don't leave us. We'll be missing you :)»
[Dmitry Parfyonov](#), CTO at Wakie
 - «Denis - one of the most polite and attentive people of all with whom I was assigned to work and be friends. To be honest - he is the most polite and attentive. The vastness of his knowledge in the field of programming and python in particular makes any interlocutor feel like a schoolboy. At the same time Denis is always open to the new and at any opportunity absorbs new

knowledge / technology. The reliability of the products that Denis writes exceeds the reliability of the Kalashnikov assault rifle about 7 times. I strongly recommend this guy to hire for a company of any level - from a small start-up, to a trans-galactic corporation - I'm sure he will benefit everywhere.»

[Alexander Dolgushin](#), Senior VoIP Engineer at Wakie

- «I was searching for 2 hours for why my application was leaking memory, I tried every tool under the sun (scalene, memory-profiler, pyrasite, pympler, guppy3) until your tool finally pointed me towards stupid flask_sqlalchemy._DebugQueryTuple increasing in ref counter. Huge thanks! I thought I was going crazy, now I can run my tasks without fearing they're gonna get OOM killed :)»

[Dominik Dario](#), [mem_top](#) user

- Sep 2011 - Jan 2014: **Python Lead Software Engineer at [TulaCo](#)**

- Lead teams (up to 5 engineers) for several projects, negotiating, delegating, reviewing.
- Then escaped from management, reports and diagrams, and focused on consulting on technologies and implementing the code from architecture level to details.
- Learned: DevOps, Amazon Elastic Load Balancer, CloudWatch, EC2 Servers; Rackspace Cloud Servers, OpenStack API; Tsung, Tuning TCP/Nginx; Stud; Django/Gunicorn, Gevent; Celery; boto, fabric, psycopg2, pylibmc, pymongo, south, umysql, ujson; facebook_sdk, tweepy; Web Scraping: Requests, BeautifulSoup, PyQt.QtWebKit; AngularJS; Memcached/ElastiCache; RDS/MySQL; DynamoDB, S3, Glacier, Redis; ElasticSearch & MongoDB: Sharded Cluster, Replication, Tuning, JS, Map-Reduce, Big Data ETL.

- Jun 2013 - Jan 2014: ICM SEO

- Planned and implemented:
 - A chain of ETL-steps that processed 650 millions of records using dozens of servers, making pre-calculations required to access these records efficiently.
 - Architecture based on ElasticSearch & MongoDB Clusters.
 - Sophisticated algorithms to handle Big Data.
 - Core of API, based on Aphant mentioned below.
- Tony Aly, [Paradise Modern](#) CEO who managed this project, said:
 - «wow... that's a really cool solution! it's very elegant, awesome. very impressive denis... tyvm!!»
 - «very astute questions...»
 - «i'm really impressed by all these phenomenal speed

- improvements -- way to go!»
 - «Thank you so much for all the hard and excellent work you have been doing. You're truly one of the most talented and intelligent people I've ever worked with -- and I'm privileged to have had this pleasure.»
 - «you really are awesome and i feel very happy knowing that in the future i can count on you to make the most complex things come to life!»

- Jul 2012 - Jul 2013: [Lootsie](#).
 - Consulted, defined and implemented architecture stack up to successful launch.
 - Configured and tuned Amazon infrastructure, understood subtleties of why Elastic Load Balancer reacted unexpectedly to load tests by Tsung, etc.
 - Created API that provided core business logic to both Web portal and Android/iOS mobile apps.
 - Later this experience helped to create open-source Apiphant - lightweight scalable web API framework, independent from project specifics like umysql, with many aspects re-thought from scratch.
 - «Well done Denis and thanks for all the hard work.»
Bryan Dickson, Lootsie CTO.

- Jan 2012 - Sep 2012: [TestFlight](#).
 - Chased and eliminated performance bottlenecks.
 - Reviewed code of other engineers, proposed improvements.
 - Enabled distributed TestFlight SDK API frontends scaling in the cloud on high-traffic demand to automatically pool latest code package prepared by the [deploy server](#).
 - «Great job Denis, good problem solving skills. Really impressed.»
«Very nice job Denis,
I also checked this out and was very pleased with
a) the amount of thought / work that went into this
b) the quality of the documentation
c) the testing procedure that you applied»
Trystan Kosmynka, TestFlight CTO.

- Sep 2010 - Aug 2012: [Burstly/RAS](#).
 - Created and improved most of the code of RAS component of Burstly.
 - 1041x speedup (from 18.740 to 0.018 seconds) of third-party code via monkey-patching Django ORM to hint MySQL to use index instead of filesort in this case.
 - «Thanks Denis, we appreciate all the work you have done for us.»
Ben Widhelm, Burstly CTO.

- Apr 2010 - Aug 2011: **Python Senior Software Engineer at [VicMan](#)**
 - Big experience with Python.
 - Created several services and project architecture parts using HTTP, HTML, CSS, JS, jQuery, TinyMCE; Nginx, CherryPy, AMQP, RabbitMQ, carrot; Pylons, Beaker, Mako, SQLAlchemy strategies; PostgreSQL, SQLite, MongoDB, MoinMoin, Sphinx.
 - Best performance speedup: 15 seconds --> 1 second by replacing $O(N*M)$ algorithm with $O(1)$.

- Jan 2009 - Dec 2010: **Senior Software Engineer part-time at [Brand Lane ApS](#)**
 - Implemented <http://100vk.dk/>
 - Adobe Flash CS3, ActionScript 3, as3corelib, PHP, TcPDF, HTML, fribetaling.dk payment system.
 - «To whom it may concern. We are an advertising agency with the focus on branding, internet and mobile. We have known Denis for more than 10 years in the industry. With his help we have accomplished a series of successful projects. In fact, according to our professional experience, there has hardly been any other developer who could beat Denis's brilliance and innovative approach. His talent helped us to achieve the solutions that seemed to be technologically impossible. In the long run working with Denis gave us a substantial competitive advantage. We expect Denis to have a breathtaking career in the first rank of world's leading companies. Please don't hesitate to contact us if you should require any additional information.»
[Dim Newman](#), Founder & Art Director, Brand Lane ApS

- Jul 2001 - Apr 2010: **Lead Software Engineer at Teplosphera**
 - Automated countless aspects of the company business, mainly with 1C:Enterprise 8.1 and MS SQL, but also with MS VC++ 6, VBS, VBA, Java (J2SE), Swing GUI, PHP.
 - Responsibility: accommodation and definition of tasks, architecture and all-level structure development, constructing code and interfaces, testing, documenting, installation and maintenance, access control administration.
 - Built sophisticated distributed accounting system.
 - Invented and implemented a lot of innovative solutions.
 - Lead software engineering department (up to 7 employees).
 - Gained great experience of real business responsibility.

- Feb 2001 - Jul 2001: **Software Engineer at Jukola-Info**
 - Developed several web services.
 - ASP, HTML, MS SQL.

Education

- Sep 1999 - June 2004: [Belarusian State University](#)
 - Leader of a hostel LAN NetOps, created its central website with search system of LAN resources (front-end: PHP, backend daemons: Perl), that became my diploma work.
 - During education created plenty of small apps beyond education course.
 - PHP, Perl, HTML, JS, AJAX, CSS, MS VC++ 6, Win32 API, ASM, VBS, VBA, Java (J2SE, J2ME), Borland Delphi/Pascal, Oracle, MySQL.
 - Academic details:
 - Area of Study: Software Engineering.
 - Degree: Specialist, [equivalent of Master's degree](#).
 - Faculty: Applied Mathematics and Informatics.
 - Specialization: Informatics.
 - Department: Computer Software Engineering.
 - Specialty: Mathematician - System Software Engineer.
- 1999: Finished lyceum with specialization in English, but with strong interests and results in Computer Science. Turbo and Borland Pascal at x86, Borland Delphi at x386.
- 1996: Won 1-st place at Belarus republic-level competition for IDE to create game pieces: graphics, sprites, and sounds. [MSX Basic at Yamaha multimedia computer](#).
- 1992: Became interested in not only gaming, but how to create a game. [Basic and ASM at ZX Spectrum](#) with tape recorder instead of disk.

Thank you for reading!