

Denis Ryzhkov

Python Senior Software Engineer

Crafting the code with love and thought since 1992

Please see my site denisr.com - it complements the classic CV below.

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Quick Samples

- Achievement in [Optimization](#): **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.
- Achievement in [Big Data](#): Created a chain of [ETL](#)-steps that processed **650 millions of records** using dozens of servers, making pre-calculations required to access these records efficiently.
- My greatest code is non-public property of my clients. My open-source code is way simpler: github.com/denis-ryzhkov
- [Principles](#): [Value for user](#), [DRY](#), [KISS](#), [Proactive!](#)
- Reading: [Code Complete](#), [Programming Pearls](#), [Python original docs - completely](#), [Implementing Responsive Design](#), [Concurrent Programming in Erlang](#), [Programming Erlang \(2nd edition\) by Joe Armstrong](#).
 - Disclosure: While [Python](#) is my present for [good reason](#), [Erlang](#) is my next step ahead.
- [Processes](#): Negotiating Requirements in fluent English and friendly mood) Analyzing task definition, proposing how to improve it. Planning Architecture and Details. Documenting. Implementing and Testing. Reviewing and Refactoring. Deploying and Demonstrating. [DevOps](#). Measuring Performance and Feedback. [Optimizing](#) via [Performance tuning](#), etc.

■ [Technologies Stack](#)

Better viewed via <http://denisr.com/#tech>

- Browser: [HTML5](#), [Less/CSS](#), [JS/jQuery/AngularJS](#)
- Infrastructure
 - [Amazon](#): [Elastic Load Balancer](#), [CloudWatch](#), [EC2 Servers](#), see Cache and DB below.
 - [Rackspace](#): [OpenStack API](#), [Cloud Servers](#)
 - [Google](#): [Google Apps Script](#), [Google App Engine](#)
- System: [Debian/Ubuntu](#) Linux, [Bash](#), [Git](#), [Supervisor](#)
- Load Test: [Tsunami](#), [Tuning TCP/Nginx](#), App/DB/etc
- Web Server: [Nginx/Stud](#)
- App, API: [Python/PyPI](#) - third party and my **own** open-source libs:
 - Web Frameworks: [Django/Gunicorn](#), [Gevent](#), **own**: [Apiphant](#)
 - Message Queues: [Celery](#), [carrot](#) for [RabbitMQ](#) with [AMQP](#) Tuning
 - Cloud, Cache, DB: [boto](#), [fabric](#), [psycopg2](#), [pylibmc](#), [pymongo](#), [south](#), [umysql](#), **own**: [pg4geks](#), [dynamo_db_dict](#)
 - Utils: [ujson](#), **own**: [adict](#), [attr](#), [bn](#), [uniqtoken](#), [method_decorator](#), [send_email_message](#)
 - [Web Scraping](#): [Requests](#), [BeautifulSoup](#), [PyQt.QtWebKit](#)
 - Social nets: [facebook_sdk](#), [tweepy](#)
- Cache: [Memcached/ElastiCache](#), [In-process cache](#)
- Database
 - [SQL](#): [PostgreSQL](#), [RDS/MySQL](#), [MS SQL](#), [SQLite](#)
 - [NoSQL](#): [DynamoDB](#), [S3](#), [Glacier](#), [Redis](#), [SphinxSearch](#),
 - [ElasticSearch](#) & [MongoDB](#): [Sharded Cluster](#), [Replication](#), [Tuning](#), [JS](#), [Map-Reduce](#), [Big Data ETL](#)

Employers and Projects

- Feb 2014 to Present: [Wakie](#) Python Senior Software Engineer and Telecom Architect.
 - Already solved several valuable tasks that improved current telecom system.
 - Planning more improvements.
 - Learning: Asterisk, pystrix, puka, Gearman, python-gearman, Mercurial, multiprocessing, Twisted.

- Sep 2011 to Jan 2014: [TulaCo](#) Python Lead Software Engineer.
 - 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](#); [Tsong](#), [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](#).

 - Projects:
 - Jun 2013 to 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 [Apiphant](#) 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 to Jul 2013: [Lootsie](#).

- Done full range of [Processes](#) mentioned above.
- 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 to 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 Kosmyka, [TestFlight](#) CTO.

■ Sep 2010 to 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 to Aug 2011: [VicMan](#) Python Senior Software Engineer.
 - 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 to Dec 2010: [Brand Lane ApS](#) Senior Software Engineer, part-time.
 - Implemented <http://100vk.dk/>
 - [Adobe Flash CS3](#) / [ActionScript 3](#) / [as3corelib](#), [PHP+TcPDF](#), [HTML](#), [fribetaling.dk payment system](#).
 - Recommendation from Dim Newman, Founder & Art Director, [Brand Lane ApS](#):
«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.»
- Jul 2001 to Apr 2010: Teplosphera Lead Software Engineer.
 - 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 to Jul 2001: Jukola-Info Software Engineer.
 - Developed several web services.
 - [ASP](#), [HTML](#), [MS SQL](#).

Education

- Sep 1999 to June 2004: [Belaruski Dziazhayny Universitet](#)
 - 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 (above Masters, below Doctorate).
 - Faculty: Applied Mathematics and Informatics.
 - Specialization: Informatics.
 - Department: Computer Software Engineering.
 - Specialty: Mathematician - System Software Engineer.
- How I started:
 - 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.
 - 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](#).
 - 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.

Thank you for reading!