Ilya YAROSHENKO

IT consultant, Engineer, Data Science Analyst

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Profile

Ilya is an engineer and IT consultant. He has experience in distributed high-load services, software optimisation, mathematical statistics and machine learning, business process analyses. He is the creator of the Mir Libraries Collection.

Experience

2017.06-now **Co-founder**. *Attestat Limited* is a Russian IT and transport startup founded by Daniil Petrov (Tomsk Logistic Center) and Ilya Yaroshenko in June 2017. The startup is focused on full stack solution for public transport. We create technologies to provide the best experience for passengers, ultimate workforce optimisation for transport companies, and interface for federal security services.

2016.02-now **IT Consultant**

Clients *Kaleidic Associates Advisory Limited*, investment management company, London, UK.

Tamedia, media corporation, Zurich, Switzerland.

Investments Department of the Tomsk Region , Tomsk, Russia.

Commercial Closed Source Projects 80% of total

Sponsored Open Source Projects Mir Algorithm - Dlang core library for math, finance and a home for Dlang multidimensional array package - ndslice. The library is sponsored by Symmetry Investments (Hong Kong) and Kaleidic Associates (London).

Commercial Open Source Projects ASDF is a cache oriented string based JSON representation. Besides, it is a convenient JSON Library for D that gets out of your way. ASDF is specially geared towards transforming high volumes of JSON dataframes, either to new JSON Objects or to custom data types.

Lubeck - High level linear algebra library for Dlang. Work in progress.

librdkafka-d - object oriented Kafka wrapper on top of librdkafka (Apache Kafka C/C++ library).

JE (json extract) - a tool to extract data from json.

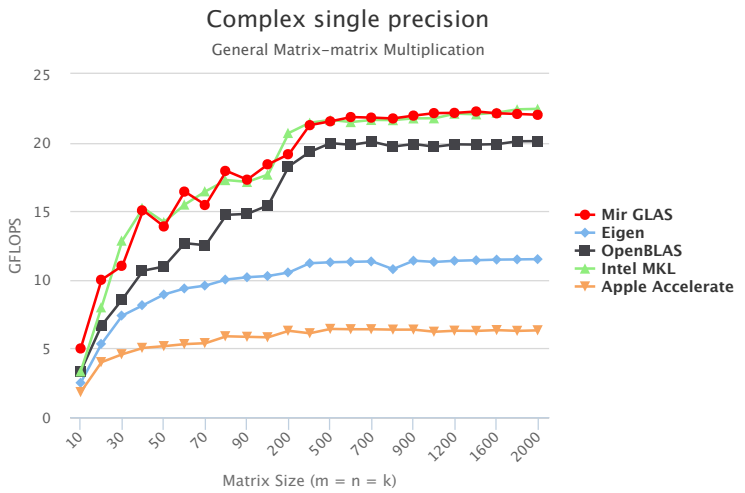
vibe-s3 - AWS client library for the D programming language.

Open Source Projects Mir - Sparse tensors, Sparse BLAS, Hoffman and others.

Mir Random - Advanced Professional Random Number Generators. Also, Ilya was a mentor for related Google Summer of Code project for the D Language Foundation.

Mir CPUID - CPU Identification Routines.

Mir GLAS - Experimental LLVM-accelerated Generic Linear Algebra Subprograms.



2015.10–2016.01 **Software Engineering Intern**, *imo.im*, Palo Alto, California, USA.

Project Extensible, distributed, in-memory, big-data database suitable for SQL-like queries in D programming language for on-demand statistics and charts. Time of query execution = 1-3 seconds. The database engine allows to aggregate per user statistics for all users at once. IMO messenger has more then 200 millions active users. The database engine was created from scratch and it is used in production.

2014.10–2015.09 **IT Consultant**, Moscow, Russia.

2013.02–2014.06 **System and Business Process Analyst**, *IMS Health*, Moscow, Russia.

Projects Database production of retail sales audit of additional pharmaceutical assortment in Russian Federation. The project included workflow optimisation between departments in Moscow office as well as between Moscow office and foreign companies' offices. Commutative workforce was increased approximately one hundred times.

An address search engine (hierarchical database & web-server) based on *Federal Information Address System*.

A customer data validation system.

Education

2009–2014 **Specialist (equivalent to Master) in Applied Mathematics and Computer Science** , *Lomonosov Moscow State University*, Moscow, Russia.

Specialisation Probability Theory and Mathematical Statistics

Extra courses Economic analysis of law

2007-2008 **Symmetric and asymmetric cryptography**, 10th grade, *Tomsk State University*, Tomsk, Russia.

Publications

2016 Yaroshenko, I., *On Robust Algorithm for Finding Maximum Likelihood Estimation of the Generalized Inverse Gaussian Distribution*, Journal of Mathematical Sciences, 2016, Vol. 218, N. 3, p. 354-362

In this paper, we propose robust numerical methods for finding the maximum likelihood estimation of the generalized inverse Gaussian distribution. A comparative analysis of the existing algorithms and the results of numerical experiments are presented. Special attention is paid to reproducibility of the tests.

2016 Yaroshenko, I., *Numeric age for D: Mir GLAS is faster than OpenBLAS and Eigen* , Mir Blog

Engineering skills

Integration	Docker, various CI services, git, and excellent software architecture skills.
Programming languages	D, C, C++, Cython, Python, LLVM IR, shell, Java.
OS	Linux (Ubuntu, Arch, Android, Docker images), macOS, Windows 10 (Hyper-V, Docker).
C/C++ Libraries	POSIX, epoll, CPython, Cython, libevent, libuv, liblinear, libsvm, different scientific C libraries, CRAN C sources, Eigen.
Microsoft	Hyper-V, MS SQL Server, MS Server Integration Services, VS, vscode.
BigData	Kafka, Spark, HFS
Web	AWS, S3, vibe.d
Standards	POSIX Sockets, C++ STL, HTTP 1.1, HTTP 2, Websockets, JSON, XML
Machine learning experience	PLSA EM, LDA, text classification, Support vector machines, HOG, pedestrian recognition, neural networks

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