Max Belousov

Lead\Software Engineer

Personal information

Full name	Maxim Belousov
Date of birth	December 28th, 1988
Email	mail@singulared.space
Language	Russian: native English: conversational
Personal website	singulared.space
Phone	+7 (919) 000-71-34

Education

2006 - 2011	Information Security Specialist (Complex security of information objects) Vladimir State University named after Alexander and Nikolay Stoletovs
2011 - 2014	Ph.D. Student (System analysis, management, and information processing) Vladimir State University named after Alexander and Nikolay Stoletovs

Technical skills

Backend development	Rust • Actix, Actix-web • Tokio, Axum, Tonic • Diesel • Hitbox Python • asyncio • Aiohttp, FastAPI, Flask • MyPy
Software development	C\C++ • Qt, QML • Linux • ARM embedded • OpenGL • pcap Python • PyQt, PySide, Sip
Databases	SQL • PostgreSQL • MySQL • MSSQL no-SQL • Riak • Cassandra • MongoDB • Redis

Information security	Participant of Honeypot team in ● RuCTF/RuCTFe ● iCTF ● Defcon ● and other information security competitions
Other	Linux, embedded (work with Pine64 devices such as pinephone and pinetime) Information security, cryptography NeoVim power user git, hg, svn

Work experience

2008 - 2010	**KayCom** Full-stack web developer
key projects:	**cyberread.com** US online bookstore. Tech stack: PHP, Symfony, MySQL Role: Backend developer
	postershop.ru One of the biggest Russian online poster store. Tech stack: PHP, Bitrix, MySQL Role: Backend developer
2012 - 2014	**Vladimir State University** Lecturer in computer science and cryptography
2010 - 2015	**AnjLab** Software Engineer

key projects:

Satago

Is a service that allows companies to submit data about how quickly their business customers pay them so that other companies can pay for access to aggregated data about companies, payment behavior before doing business with them, as an alternative to a traditional business credit report. As a python developer, I was the conduct of Sage integration process (like a service and standalone desktop windows application).

Tech stack:
Python, PyQt, Windows
Role:
Software engineer

key projects:

FlightMonitor

Hardware-software complex for dispatching aircrafts while fog, hail, frost suppression, protection against snow avalanches, and for data communication between boards and the base. The complex supports the exchange of special data such as digital maps, statistical information, and meteorological reports.

Tech stack:
C#, Windows
Role:
Software engineer (transmission protocol, airplane trace prediction, etc.).
Exploitation engineer.

FlightMap and CloudCube

Tools for analysis of meteorological data taken from different sources (satellite, radar). The tool allows capturing data from text, binary files, and images. Different data present in the program as layers, which can be put into each other, showed as flat figures or isolines. CloudCube is 3D OpenGL cloud data modeling and representation system. The tool can represent cloud models in different visual types, predict reagent transmission and save data for the next analysis steps.

Tech stack:
C++, OpenGL, Qt
Role:
Lead developer

Information analysis system “2 TP”

System for collecting and processing information about using water resources (consumption, disposal) by enterprises for analysis and reporting purposes. The system is meant for government service and has distributed hierarchical topology: a number of regional data centers, capable to work independently and gather information from lower levels of hierarchy to higher.

Tech stack:
Python, PyQt, Windows
Role:
Python developer

2015 - now

Rambler&Co

Python developer, Lead of media technology development team

Key projects:

Paywall

System for collecting and processing media portal's users such as visit information, unique material, and others. The media portal using this collected information can set up some access limits. These restrictions can be overcome by users after successful payment. The project uses Riak as the main storage and is based on event architecture built on top of RabbitMQ. Btw this project uses Cassandra and python 3.5 with asyncio as backend.

Tech stack:
Python, Asyncio, Aiohttp, Riak, Cassandra, RabbitMQ
Role:
Python developer (lead)

Adblock

The system allows mobile users to disable advertisements for some small payments. This project uses paywall architecture and shares some codebases.

Tech stack:
Python, Tornado, Riak, PostgreSQL, Clickhouse
Role:
Python develop

Rambler/video

Video recommendation platform.

Tech stack:
Python, Asyncio, Postgresql, Riak, Docker, Swarm
Role:
Senior Python Developer

Rambler/news

One of the biggest news aggregators and news platform in Russia.
When I started on this project (2017) it was mostly python applications with classical legacy project problems:

- High costs of development and support
- High latency on web components (API and front-end)
- The low actuality of news (mostly by long caching)

Since 2018, I have become the head of the development team. With a team I were able to mostly solve all the problems described:

- We are rewriting all Aggregator parts with actual ML algorithms and technical stack
- Rewrite core API with Rust.
- Rewrite parsing component with Rust
- Remove all caching layers instead of one
- Latency has decreased by about 10 times
- Incidents count has decreased by about 10 times
- Resource costs have decreased by about 20 times

Btw in the development team's area of responsibility includes such projects as MediaUp, Horoscopes, Weather, and some others.

Tech stack:

Rust, Actix, Python, PostgreSQL, Redis, RabbitMQ, Scikit-learn, Deeppavlov
Role: Lead Python developer, Lead of development team

MediaUp

MediaUp is a news mobile application for Android and iOS based on recommendations and editor's choices.
With the team, I designed the entire API for the application and the Administrative part (for news editors).

Tech stack:
Rust, Actix, Actix-web, Diesel, PostgreSQL
Role: Lead of backend development team

Conferences & meet-up

- PyCon.ru 2021
- DevConf.ru 2016
- RustCon.ru 2021 (Program director)
- Moscow Python meetup (Local python community)
- Moscow Rust meetup (Local rust community)

Open source projects

- Hitbox (author) - A high-performance caching framework suitable for single-machine and for distributed applications in Rust
- Actix-web-validator (maintainer) - Rust library for providing validation mechanism to actix-web with Validator crate.
- aioriak (author) - Python asyncio client for Riak
- Aiohttp (contributor) - Asyncio web framework
- Conflow (author) - Python configuration manager

- flask-restful (contributor) - REST API framework for Flask
- pyjasperclient (contributor) - SOAP client for JasperReports
- flask-hmacauth (contributor) - Flask hmac auth module

Professional interests

- Rust, Python
- Distributed systems, CRDT
- Linux and embedded systems
- Security analysis and cryptography, CTF Hacking games
- Web technology
- Science
- OpenGL and game dev

In my spare time, I am a musician and piano player. Btw I really like cross country biking and developing some software for PinePhone and PineTime.