





Ksenia Portu

Software engineer, Mathematician, Haskell/Nix admirer

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Up-to-date version of CV is available at
<https://ksenia-portu.github.io/cv-haskell>

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Mathematics	Haskell	Functional programming	Teaching	NixOS	Linux
Blockchain	Pi calculus	Petri nets	Linear Logic	Session types	Git
Cryptography	.....	Devops	.....	Kubernetes	.....	Research and Software Development	.....	Category theory	.....	Dependent types	.....
Recursion-schemes	.....	Linear algebra	.....	Statistics	.....	Machine learning	.....	SQL	.....	Python	.....

Software engineer passionate about Mathematics

Professional Experience

Oct 2021 - Aug 2022 · 11 mos

Haskell Software Engineer payment system

Haskell PostgreSQL docker docker-compose nix knative

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**About used stack:**
**project1**

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web framework      Servant
database           PostgreSQL
API                [PostgREST](https://postgrest.org/en/stable/) for hadling requests (PostgREST turns a Pos
message broker     [*RabbitMQ*]{.spurious-link target="RabbitMQ"}
in-memory data store [Redis](https://redis.io/)
metrics, events, and logs [prometheus](https://prometheus.io/), [grafana](https://grafana.com/), [co-log](https://t
deploy, CI         [docker](https://www.docker.com/), [kubernetes](https://kubernetes.io/), [aws](https://av
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**project2**

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web framework      Servant
database           PostgreSQL
message broker     Kafka
devops            Knative (serverless) , Kubernetes, Docker, Nix
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**About tasks:** Backend development, Architecture, Research (Event-Driven-Design, Serverless)
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Mar 2021 - Aug 2021 · 6 mos

Haskell Software Engineer

recruitment web platform

Haskell PostgreSQL docker docker-compose

About used stack:

haskell: Yesod PostgreSQL

About tasks: Backend development

Apr 2019 - Feb 2020 · 10 mos

Haskell Software Engineer

develop DSL

Haskell Nix package manager compiler lambda calculus Parsing Type inference Bidirectional typechecker Evaluation

About used stack:

haskell:

megaparsec

About tasks:

Research and development

Oct 2017 - Jan 2019 · 1 yr 4 mos

Blockchain Haskell developer

new generation blockchain

Haskell cryptography blockchain consensus algorithms p2p network routing smart-contracts RocksDB rancher docker

Description

About the project:

I have worked as Blockchain Haskell developer on

new blockchain generation project. The framework part of the project is

open-sourced <https://github.com/Enecuum/Node> and it has decent

documentation and explanations about architecture and possibilities:

[Building network actors with Enecuum Node Framework](<https://gist.github.com/graninas/9beb8df5d88dda5fa21c47ce9bcb0e>)

[Why Haskell?](<https://enqblockchain.medium.com/why-haskell-eacb087f3adb>)

[Enecuum. Framework possibilities](<https://enqblockchain.medium.com/enecuum-framework-possibilities-d4fa49c3ea40>)

[Enecuum.Framework Possibilities, Part 2](<https://enqblockchain.medium.com/enecuum-framework-possibilities-part-2-7c8>)

About used stack:

haskell:

Free monads (eDSLs)

STM (Software Transactional Memory)

Lenses

Key Value database - RocksDB

common:

- DevOps: rancher, docker
- Metrics: Grafana+Graphite+StatsD
- Project tracking: Redmine
- Knowledge database: Confluence

****About tasks:****

Research and development in such fields as

- blockchain related:
- blockchain consensus algorithms (PoW, PoS, PoA)
- p2p network, routing -- tests (integrational, functional)
- smart-contracts, petri-nets, pi-calculus
- common application dev related:
- config management
- cli
- logging
- Packages, dependency management via stack.
- parallel computations and processes

Education

Ural Federal University / Applied Mathematics, 2007 - 2012, Master degree

Languages

English, Russian

Additional Experience

University Lecturer

Branch of Ural Federal University

Sep 2020 - Jun 2021 - full university year(two semesters)

teaching

I taught such disciplines as

- Information System's design
- High-level programming languages (Haskell)
- Databases
- Semantic networks

I curated numerous students' programming projects.