Ksenia Portu

Software engineer, Mathematician, Haskell/Nix admirer

Last update: December 23, 2022

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

Skill	Level	Skill	Level	Skill	Level	Skill	Level	Skill	Level	Skill	Level
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 Po
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://
deploy, CI                 [docker](https://www.docker.com/), [kubernetes](https://kubernetes.io/), [aws](https://a
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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

recruitement web platform

Haskell PostgreSQL docker docker-compose

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**About used stack:**
**haskell:** Yesod PostgreSQL

**About tasks:** Backend development
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Apr 2019 - Feb 2020 ·10 mos

Haskell Software Engineer

develop DSL

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

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**About used stack:**
**haskell:**
megaparsec

**About tasks:**
Research and development
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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

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# 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/9beb8df5d88dda5fa21c47ce9bcb0
[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-2-7c

**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
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**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
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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`

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 I taught such disciplines as
 - Information System's design
 - High-level programming languages (Haskell)
 - Databases
 - Semantic networks

 I curated numerous students' programming projects.
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