

# Ksenia Portu

## Software engineer, Mathematician, Haskell/Nix admirer

Last update: December 14, 2022

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

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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

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

web framework	Servant
database	PostgreSQL
API	[PostgREST](https://postgrest.org/en/stable/) for handling 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

**project2**

web framework	Servant
database	PostgreSQL
message broker	Kafka
devops	Knative (serverless) , Kubernetes, Docker, Nix

**About tasks:** Backend development, Architecture, Research (Event-Driven-Design, Serverless)

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/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

**\*\*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.