

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 Research and Software Development ●●●●	Session types ●●●●	Git ●●●●
Cryptography ●●●●	Devops ●●●●	Kubernetes ●●●●	Machine learning ●●●●	Category theory ●●●●	Dependent types ●●●●
Recursion-schemes ●●●●	Linear algebra ●●●●	Statistics ●●●●	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 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

****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/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.