Kristofer Fannar Bjornsson

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EDUCATION

Columbia University *Aug 2024 - Dec 2025 (Expected)*
MSc Computer Science | Software Systems New York, NY
- ICPC 2024 GNY Regionals participant
  Coursework | Operating Systems · Cryptography · Programming & Problem Solving

Reykjavik University *Aug 2021 - May 2024*
BSc Software Engineering Reykjavik, IS
- First Class with Distinction · Dean's list F22 & F23 · Freshman grant F21
  Coursework | Concurrent & Distributed Programming · Cybersecurity · Computer Networks

WORK EXPERIENCE

Keystrike *May 2024 - Jan 2025*
Software Engineer Intern Reykjavik, IS
- Migrated security desktop driver from Windows to macOS in Rust, now adopted by 1/3rd of company's userbase
- Wrote proof of concept for and resolved zero-day vulnerability, preventing injected inputs from being validated
- Implemented automatic app building, signing & deployment pipelines for seamless distribution through GitHub Actions

Reykjavik University *Aug 2023 - Dec 2024*
Teaching Assistant | Algorithms · Web Programming · Computer Networks Reykjavik, IS
- Held TA sessions, mentoring 60+ students through solving problem sets over 3 semesters
- Evaluated student submissions & provided feedback to Professors on assignments and exams

Syndis *May 2023 - Jan 2024*
Software Engineer Intern Reykjavik, IS
- Led a team to design and implement a full-stack prototype with React, Express & PostgreSQL through Docker
- Leveraged multi-role functionality with in-house authentication service using JWT tokens
- Conducted interviews with 5+ prospective clients to streamline BCP onboarding process from 2 weeks to 1 hour

Marine & Freshwater Research Institute *May 2022 - Jan 2023*
Software Engineer Intern Reykjavik, IS
- Created web service using Java's Spring framework to collect and persist >10.000 daily events into local Oracle SQL server from fish passing through graders in Icelandic fisheries, used to improve fishing quota estimates
- Prototyped a method for estimating fish origin probabilities based off of catch date, vessel location and amount fished

PROJECTS

PremKing *github.com/logi-og-kristo/premking*
- Launched open source full-stack mobile app on the App Store, managing $\approx$ 100 monthly users, using React Native & Golang backend deployed on AWS, connected to PostgresSQL database

lmkDB *github.com/lmkdatabase*
- Developed GPU accelerated SQL-like database from scratch using modern C++ and CUDA, calculating JOIN operations on 10.000.000+ rows $\approx$ 10x faster than on non-GPU machines

Oven Scheduler | Linux Kernel
- Created new default process scheduler, called "Oven", with C in the Linux Kernel, beating CFS (current default scheduler) by $\approx$ 17% on single core and $\approx$ 5% on 4 cores on selected benchmarks

Desktop Defender *github.com/desktopdefender*
- Built a network security desktop application in Tauri for monitoring devices & traffic on home networks
- Brute forced admin credentials on home network's router by scraping unauthorized endpoints on admin portal

Research Project w/ Keystrike *report*
- Evaluated existing & developed novel string comparison algorithms to determine whether a sequence of typed inputs could produce an edited string, reaching over $\geq 80\%$ confidence on average

Raft *github.com/lsig/raft*

- Recreated Raft Consensus algorithm from scratch in Golang over gRPC, using concurrent nodes in distributed network
- Consistently replicated logs between 10+ servers bouncing over 100.000 concurrent messages on a network

TECHNICAL SKILLS

- **Languages**| C · C++ · TypeScript · React · Golang · Python · Java · Rust · Bash · SQL
- **Infrastructure**| Linux Kernel · AWS EC2 · CI/CD · Docker

AWARDS

Icelandic National Gymnasium Math Competition *2nd 2018 [⊕] | 16th - 17th 2019 [⊕]*

Icelandic National Compulsory School Math Competition *4th 2016 [⊕]| 4th 2017 | 4th 2018 [⊕]*