

A software engineer based in Seoul, Republic of Korea.

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Further contact points available at the end of this résumé.

Work Experiences	DevCAT Corporation https://devcat.com/ , Senior Game Programmer	Oct 2020 — Current
	Nexon Korea Corporation https://nexon.com/ , Senior Game Programmer	Aug 2014 — Sep 2020
	<ul style="list-style-type: none">• Maintenance of an internal communication tool, including the complete frontend rework. (2020—)• Design and development of internal Silvervine Server Engine 2 (SSE2) framework. (2018—2019)• Development of an unreleased multiplayer online jigsaw game demo. (2018)• Design and development of Kailua type checker and VS Code extension for Lua. (2015—2017)• Server development and live operation for <i>Mabinogi Duel</i>. (2015)• Client and server development of an unnamed internal prototype. (2014)	
	iPlateia Inc. https://www.iplateia.com/ , Software Engineer	Feb 2013 — Jun 2014
	<ul style="list-style-type: none">• Architecture, development and optimization of a backend for a patented audio recognition solution.• Development of Android SDK for the aforementioned solution.	
Education	Move Inc. https://move.is/ , Software Engineer	Feb 2012 — Dec 2012
	<ul style="list-style-type: none">• Development of a backend, API server and Android application for the photo sharing service Roomie.• Development of a backend, web service and trending algorithm for GAE9 https://gae9.com/.	
	NexG Co., Ltd. https://www.nexg.net/ , Software Engineer	Jan 2008 — Dec 2008
	<ul style="list-style-type: none">• Served as a Skilled Industrial Personnel 산업기능요원 for the military substitute.• Maintenance of a command line framework for routing daemons.• Development of various user-land daemons mostly from the scratch: SNMP v1/v2c/v3 client and server, TACACS+ server, SSH server and TLS server.	
	KAIST, Master of Science	Mar 2010 — Feb 2012
	<ul style="list-style-type: none">• A member alumnus of the Programming Language Research Group https://plrg.kaist.ac.kr/.	
	KAIST, Bachelor of Science	Mar 2005 — Feb 2010
	Gyeonggi Science High School	Mar 2003 — Feb 2005

The full list is available in <https://github.com/lifthrasiir> and <https://mearie.org/projects/>.

Roadroller <https://github.com/lifthrasiir/roadroller> JavaScript | 2021

- Size-optimizing heavyweight packer for large JavaScript demos (e.g. [js13kGames](#)).
- Based on rANS coding, logistic context mixing and a large number of sparse context models.
- Used by many js13kGames submissions in 2021, saving additional 1–2 KB over state-of-the-art packers.

HTML5 Jigsaw Puzzle <https://s.mearie.org/jigsaw> JavaScript, C# | 2017 — 2018

- An enjoyable or nerve-racking jigsaw puzzle down to the basic.
- Originally intended as a proof-of-concept and an SVG experiment in devCAT, later fully developed as a multiplayer online game demo for SSE2 (not in public).

Kailua <https://github.com/devcat-studio/kailua> Rust | 2015 — 2017

- A type checker for Lua 5.1, implemented in Rust. Also included a VS Code IDE extension.
- The annotation language is an unmodified Lua code with special comments for the easy migration.
- The type system is based on Hindler-Milner and significantly extended with subtyping, gradual typing and row polymorphism, comparable to that of TypeScript 1.x.
- Used by several internal Lua projects; ultimately shelved because of the decision to switch to C#.

Rust programming language, Library Maintainer and Contributor 2012 — 2017

- The architect and former maintainer of popular libraries including [Chrono](#) and [Encoding](#).
- Contributed several features to the standard library and tools, most significantly the correctly rounded decimal-to-float conversion using then state-of-the-art algorithm (Grisu3).
- Recognized as a [Friend of the Tree](#) by the Rust Team.

Cursive Script Object Notation (CSON) <https://github.com/lifthrasiir/cson> Rust | 2013 — 2014

- A JSON superset intended for human consumption, carefully specified to avoid a bloat and caveats.

JubeatInfo <http://j.ubeat.info> (defunct), Web Developer PHP | 2010 — 2012

- A website for collecting and analyzing [Jubeat](#) play data, one of the earliest of the kind.
- Designed and developed the most portion of public-facing website.

qr.js <https://github.com/lifthrasiir/qr.js> JavaScript | 2011

- A self-contained and moderately popular library for generating QR code.

Esotope Brainfuck Compiler <https://github.com/lifthrasiir/esotope-bfc> Python | 2009

- A popular Brainfuck-to-C compiler, the state of the art at that time. Used as a Bachelor's thesis.

TextCube <https://textcube.org>, Committer PHP | 2007

- A Korean content management system that was popular for blogs.
- Contributed to the WYSIWYG editor architecture.

Presentations and Articles	<p>Nexon Developer Conference (NDC) 2019: 실버바인 대기열 서버 설계 리뷰 <i>Design Review of Silvervine Waiting Line server</i></p> <p>NDC 2017: 내가 만든 언어의 개발환경을 Visual Studio Code로 빠르고 쉽게 구축하기 <i>Fast and easy development environment for my own languages in Visual Studio Code</i> (the second Kailua presentation)</p> <p>NDC 2016: <마비노기 듀얼> 서버, 동적 타입 언어에서 반 정적 타입 언어로의 변신 <i>Mabinogi Duel server, the transformation from dynamic types to semi-static types</i> (the first Kailua presentation)</p> <p>2016: <i>Why is a Rust executable large?</i></p> <p>2015: 아희아희 <i>Aheui.aheui</i> (presented in the tongue-in-cheek <i>Aheui Developer Conference</i>)</p> <p>2012: 개9 인터넷 트렌드 해부 <i>Anatomy of GAE9 Internet Trends</i></p>	
	Academic Publications	<p><u>Seonghoon Kang</u> and Sukeyoung Ryu, Formal specification of a JavaScript module system, In <i>Proceedings of the ACM international conference on Object oriented programming systems languages and applications (OOPSLA '12)</i>, October 2012.</p> <p><u>Seonghoon Kang</u> and Sukeyoung Ryu, FortressCheck: Automatic Testing for Generic Properties, In <i>Proceedings of the 26th ACM Symposium on Applied Computing (SAC 2011)</i>, March 2011.</p> <p>Jooyeop Kim, Joongi Kim, Narae Han, <u>Seonghoon Kang</u>, Sanghoo Lee, Hongjin Yeh, String Matching Algorithm for Real-time Intrusion Detection and Response, In <i>Proceedings of the 31th KISS Spring Conference</i>, April 2004.</p>
	Awards	<p>JS1024 annual golfing competition, p5.js winner (6th overall) Aug 2020</p> <ul style="list-style-type: none"> • For <i>AquaPop1K</i>, originally designed by Erik Sombroek and written and optimized by me. <p>Nexon Developer Conference, Best Presentation Apr 2019</p> <p>International Obfuscated C Code Contest (IOCCC), Best short program Sep 2012</p> <pre>long long n,u,m,b;main(e,r)char **r;{f\ or(;n++ (e=getchar() 32)>=0;b="ynwtsflrabg"[n%=11]-e?b:b*8+ n)for(r=b%64-25;e<47&&b;/=8)for(n=19;n;n["1+DIY/.K430x9\ G(kC["]-42&255~b (m+=n>15?n:n>9?m%u*~-u:~(int)r?n+ !(int)r*16:n*16,b=0))u=111<<6177%n--*4;printf("%11x\n",m);}</pre> <p>KAIST Computer Science Department Best Master's Thesis Feb 2012</p> <p>ACM ICPC — Seoul Regional, 8th place (shared) and NHN award Nov 2007</p> <p>Korea Olympiad in Informatics, Bronze prize among middle school students Jul 2001</p>

Skills

The superscript indicates the approximate number of years since the last significant use, rounded down.

Programming language: C⁰, C++^{98/11/14/17}¹, C#², Rust¹ (contributor), Python 2/3⁰, JavaScript⁰, TypeScript⁰, Sass⁰, SQL-92⁰, shell scripts (mostly bash)⁰, Lua 5.1–5.3⁶, Java (up to 8)⁷, Haskell⁹⁺.

Non-professionally: Assembly (x86), AutoHotKey, D 1.0, Go, M4, OCaml, PHP 5.x, Prolog, Ruby 1.x, Scheme/Racket, TeX, Visual Basic (pre-.NET), XSLT and numerous esoteric programming languages.

Platforms: Microsoft Windows⁰, Linux (x86⁰, ARM⁰, MIPS⁹), Android⁷, Amazon Web Services¹.

Non-professionally: macOS, WebAssembly.

Frameworks and Services: Express.js⁰, Flask⁰. MySQL/MariaDB⁰, MongoDB⁰, Redis¹, ZooKeeper⁷, ZeroMQ⁷, RabbitMQ⁹, PostgreSQL⁹.

Non-professionally: Django, SQLite.

Tools: Vim⁰, Visual Studio², Visual Studio Code⁰, NPM⁰, git⁰, Subversion⁶, GDB⁹.

Non-professionally: AFL fuzzer, kcov (contributor), Mercurial, Valgrind, Xcode.

I have also done:

- Design and development of domain-specific or general-purpose programming languages.
- Performance (architectural and/or low-level), memory and code size optimization.
- Reverse engineering and static software analysis (x86, Android).
- Distributed and cryptographic protocol design. I was for example responsible for both the server-to-server and server-to-client protocols of SSE2 including their encryption layer.

I can speak Korean (native), English and a bit of Japanese. Spoken English is slightly limited.

Other Activities

Probably the earliest discoverer of a large class of preg_replace vulnerabilities (CVE-2005-1820).

Served as an administrator of Korean Wikipedia <https://ko.wikipedia.org/> from 2006 to 2008.

Had run a campaign against internationalized domains in mixed Korean script: <https://no-hanja-domain.github.io/>.

Contact

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Twitter: [@senokay](https://twitter.com/senokay)

GitHub: [lifthrasiir](https://github.com/lifthrasiir)

Hacker News: [lifthrasiir](https://news.ycombinator.com/user?id=lifthrasiir)

Mobile: Available upon request (emergency use only)

Location: Seoul, Republic of Korea — not willing to relocate and no detailed location available

I don't have any Facebook or LinkedIn account.