Aaron **Knudtson**

DEVELOPER · ENGINEER

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Summary

Current Lead Developer at start-up company RillaFi. 2 years experience in Full Stack Development, frontend React engineering, backend Node development, Solidity and Vyper smart contracts, and 1 year prior experience specializing in data science. I try to prioritize simple, maintainable codebases that opt for simplicity and speed. I am also a maker who likes to code in Rust in my free time, configure my Neovim and development environment, model and 3D print my projects, and often found at the local Hackerspace working on some project. I enjoy learning how to use new tools and processes, and problem solving to accomplish some unique task.

Skills

Design Principles	SOLID, GOF
DevOps	AWS, Docker, Kubernetes, Github CI/CD
Back-end	Next.js, Rocket, Express, Flask, Django, REST API
Front-end	React, Angular, HTML5, CSS, SASS
Programming	Typescript, Javascript, Node.js, Python, Lua, Rust, JAVA
Soft Skills	Responsible, Self Starter, Organized, Detail Oriented, Problem Solver, Technical Writing, Remote Capable

Work Experience

RillaFi *Remote*

LEAD FULL STACK DEVELOPER *Jan. 2022 - Present*

- End to end devlopment of the RillaFi web app.
- Built and tested smart contracts in Solidity to support user donations and composed integrations with 3rd party protocol's composable smart contracts.
- Designed and implemented a backend bulk data fetching scheme to fetch user information from multiple protocols using only 2 external http requests.
- Deployed multiple AWS EC2 servers for testing and implementation of website.
- Implemented several API endpoints in Next.js and in serverless AWS Lamda functions.

Freelance Work *Remote*

FULL STACK DEVELOPER *Sep. 2021 - Jan. 2022*

- Designed and implemented several websites for clients to conduct several interactions on the Ethereum Blockchain using React, Next.js, MySQL, and AWS stack(Including EC2, S3, RDS, and Route 53).
- Implemented merkle tree verification in smart contracts and merkle tree proof generation on a website frontend.
- Hosted files on several decentralized file storage solutions, including IPFS and Arweave.
- Trained, tested, and deployed several smart contracts on the Polygon blockchain, focusing on automation and interoperable integration with 3rd party contracts.

PSSL at the University of Florida *Gainesville, FL*

GRADUATE RESEARCH ASSISTANT *Feb. 2020 - Jan. 2022*

- Led computation (using MATLAB) and data presentation of acceleration noise components for the upcoming successor to NASA's GRACE-FO satellites.
- Compiled data to report for publication, and wrote technical description for process and results.
- Explored and tooling and conducted tests for computations of molecular interactions across a range of expected pressure and thermal gradient to define acceleration noise profile.
- Familiarized myself with the current research landscape for LISA like GRS sensors.

University of Florida CFD Combustion Lab *Gainesville, FL*

GRADUATE RESEARCH ASSISTANT *Aug. 2019 - Feb. 2020*

- Configured experimental simulations for custom lab developed FORTRAN software for cutting edge multi-phase combustion.
- Implemented a fluid dynamics simulation in FORTRAN using the MUSCL scheme for PDEs.
- Familiarized with Linux server architecture, shell commands and navigation, and development with limited documentation.

NASA Marshall Space Flight Center *Huntsville, AL*

SYSTEMS ENGINEERING INTERN *May. 2019 - Aug. 2019*

- Overhauled engine systems test diagnostics by interpreting bit-resolution controller documentation with custom MSFC plotting software and outputting as digestible slides for less senior engineers.
- Worked inside limited constraints and limited documentation to learn a custom scripting language and problem solve, even if help is not available.

Projects

AsciiFire *Self Project*

RUST *Weekend*

- Created library and CLI tool in Rust for parsing an image and outputting a char-based representation of the image.
- Installable by running 'cargo install asciifire'.

LumberJacked *Side Project*

REACT, SUPABASE *September - present*

- Creating website to log workouts and plot progress over time.
- Using unfamiliar tooling such as Supabase and component styling to expand knowledge and practice.

Education

University of Florida *Gainesville, FL*

M.S. IN MECHANICAL ENGINEERING *Aug. 2019 - Aug. 2021*

- Conducted research throughout two labs affiliated with DoD and NASA.

North Dakota State University *Gainesville, Florida*

B.S. IN MECHANICAL ENGINEERING *Aug. 2015 - May 2019*

- Received Summa Cum Laude Honors.
- Achieved the Dean's list all 8 semesters.

Extracurricular Activity

Gainesville Hackerspace *Pohang, S.Korea*

MEMBER AND CONTRIBUTOR *Jun. 2010 - Jun. 2017*

- Reformed the society focusing on software engineering and building network on and off campus.
- Proposed various marketing and network activities to raise awareness.

PLUS (Laboratory for UNIX Security in POSTECH) *Pohang, S.Korea*

MEMBER *Sep. 2010 - Oct. 2011*

- Gained expertise in hacking & security areas, especially about internal of operating system based on UNIX and several exploit techniques.
- Participated on several hacking competition and won a good award.
- Conducted periodic security checks on overall IT system as a member of POSTECH CERT.
- Conducted penetration testing commissioned by national agency and corporation.