

# LUCAS SONG

🌐 LucasSong | 🐙 Lucas-Song-Dev | 🌐 in/Lucas01-Song | ☎ 1.403.988.6881 | ✉ Lucas02.Song@gmail.com

## TECHNICAL SKILLS

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**Languages:** Java, Python, JavaScript, HTML & CSS, System Verilog, ARM7/ARMv8

**Tools/Frameworks:** React, MongoDB, AWS, Heroku, Git, SSH, Node/Express, Linux, Jira, NPM, LaTeX, MATLAB

## PROJECTS

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🐙 **ASSET AI** | *React, JS, HTML & CSS, MongoDB, Node/Express, Heroku* Feb 2022 - Present

- Developed a full stack asset generator and hosting service where users create, view, and delete posts
- Stored user and post data on MongoDB and built API routing in Node and Express
- Built website in React.js and composed responsiveness using tailwind and CSS
- Engineered Custom hooks utilizing state and effect to retrieve and update information from created API

🐙 **Pathfinding Visualizer** | *React, JS, HTML & CSS* Nov 2022 - Present

- Developed intuitive application of Dijkstra and A\* algorithms to identify the shortest path between nodes
- Enhanced user experience by designing responsive grid layouts to handle multiple display sizes
- Transformed application nodes to smoothly transition into personal website using animations and react hooks

**Multi-Client Java server** | *Java, AES, twitter API* Nov - Dec 2022

- Created an interactive server capable of accommodating multiple client connections and encrypted data streams using AES & Blowfish tech
- Integrated cache which enabled 10x faster access to frequently accessed resources, cutting down API calls by 70%
- Configured & deployed backup routes to sustain service continuity amidst network disruptions

**RISC Processor** | *System Verilog, Quartus, ARM7* Nov 2022

- Designed and built a 16-bit Turing Complete machine using System Verilog in 3 weeks
- Engineered modular testing to improve component performance by 50%

## PROFESSIONAL EXPERIENCE

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**Assistant Engineer - Control Systems, Sunlake Co. Ltd.** June - Sept 2022

*Edmonton Clean Hydrogen Project, Edmonton Refinery Integration*

- Developed Instrument Index Database and Control System I/O List to streamline control system deliverables
- Collaborated with Control Systems Lead Engineer to refine design criteria for plant telecommunication networks and control system architectures
- Enhanced piping & instrumentation diagrams, block diagrams and associated documents to reinforce quality assurance process for engineering projects, contributing 10% reduction in error rate

## ADDITIONAL EXPERIENCE

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**Python Tutoring** | Python, PyGame

- Established comprehensive 2-month Python curriculum raising hundreds for COVID relief
- Coached students in developing interactive projects such as Snake & Alien Invaders
- Delivered an effective learning plan to enhance student understanding of core concepts and improve student's problem-solving skills, resulting in up to 50% faster solutions

## EDUCATION

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**The University of British Columbia**

Anticipated 2025

Bachelor's Degree in Applied Science, Computer Engineering

**Coursework:** Software Construction, Computer Hardware, Data Structures and Algorithms, Math Proofs, Linear Algebra