Sean Roarty

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EDUCATION

University of British Columbia - 3.9 GPA **Kelowna, BC/Canada**
Bachelor of Science in Computer Science Sept 2018 - May 2022
Honors:

- Dean's List — 2018 — Awarded for a GPA of 4.0
- Deputy Vice-Chancellor Scholarship — 2018, 2020, 2021 — Awarded for a 3.7+ GPA.

EXPERIENCE

ResearchTube (Capstone Project) **Kelowna, BC/Canada**
Team Lead May 2021 – Aug 2021

- Lead a team of three developers and was responsible for setting milestones, assigning tasks, and meeting regularly with stakeholders.
- Added flexibility to the video creation tool by creating a custom templating system built upon JSON and MongoDB.
- Increased scalability of asynchronous video rendering with Celery, Redis, and Django REST.
- Created the user REST API and database using Express and PostgreSQL
- Developed video streaming and storage solution by leveraging AWS S3 and pre-signed URLs.
- Containerized project with Docker and deployed to AWS on Elastic Beanstalk.

Western Canadian Learning Network **Kelowna, BC/Canada**
Course Developer June 2018 – Dec 2021

- Created over fifty physics answer keys used by teachers across British Columbia and Alberta.
- Communicated directly with educators to gather feedback and address their needs and concerns.
- Implemented an improved key format that was more robust, extensible, and reusable. This change significantly cut the cost of courseware revisions.

PROJECTS

They Must Dig (Ongoing Solo Project)
A 3D browser-based game where the player digs into the earth to find treasures and secrets.

- Built game engine with Three.js and TypeScript.
- Implemented procedural map generation and dynamic terrain deformation.

@sclepius — TreeHacks (Stanford University event) Feb 2021
A health-care app that gives patients and their families access to records, test results, and updates.

- Designed and built the front-end interface, logic, and routing with Flutter and Dart.
- Won the "@Company API Challenge" prize.

QGrooves — Hacktech (Caltech event) March 2020
A web tool that allows the user to design a quantum circuit that is automatically transformed into music.

- Created drag-and-drop quantum circuit interface with JavaScript, HTML, CSS, and Phaser 3.
- Won the "Inspiring the Next Generation of Tech" prize.

SKILLS

Languages: C++, STL, Java, JavaScript, TypeScript, Python, C, SQL, HTML, CSS
Databases: MongoDB, PostgreSQL, DynamoDB
Libraries & Frameworks: Node.js, Express, Django, JUnit, WebGL, Three.js, OpenGL, CUDA
Tools: Git, Linux, CLI, Docker