

# Tessa Power

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## SUMMARY

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Computer Science graduate with software engineering and product ownership experience. Specializes in C++ graphics programming and real-time rendering systems. ISTQB-certified tester and Scrum Product Owner.

## TECHNICAL SKILLS

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**Languages:** C++14/17/20/23, Win32, C, C#, JavaScript/TypeScript, Python, Java

**Graphics:** DirectX 11/12, OpenGL/WebGL, ray tracing, HLSL/GLSL shaders, OpenCV, PIX, RenderDoc

**Tooling:** MS Unit Testing Framework for C++, Visual Studio Graphics Diagnostics, CMake, Valgrind

## PROJECTS

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### 3D Procedural Terrain | *Win32, C++, OpenGL, GLSL, DearImGui*

- Interactive and editable procedurally-generated terrain environment with real-time mesh updates.

### Hydraulic Erosion Simulation | *C++, OpenGL, Physics Simulation*

- Interactive, physics-based 3D hydraulic erosion simulation with real-time updates.

### Video Stabilizer | *Win32, C++, OpenCV, OpenGL, DearImGui*

- Stabilizes shaky footage using SIFT feature detection and the RANSAC algorithm.

### Shader Development Playground | *WebGL, JavaScript*

- Hot-reloading, locally hosted shader playground for developing WebGL shaders.

### 2D Game Engine | *Entity-Component System*

- Custom game engine supporting audio, graphics, actor management, world management, and 2D physics.

## TECHNICAL WRITING

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### Creating Realistic Terrain by Modelling the Physics of Hydraulic Erosion

- An intuitive, visual guide to the math and theory behind my hydraulic erosion simulation project.

### Repurposing C++ Iterators as Geometric Generators

- A novel application of C++ iterators as geometric generators in solving a computer vision problem.

## EDUCATION

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### Victoria University of Wellington

*Bachelor of Science in Computer Science – GPA: 3.6/4.0*

*2020 – 2024*

- Coursework included: computer graphics, rendering pipelines, ray tracing, real-time rendering, computer vision, artificial intelligence, and game engine development.

## CERTIFICATIONS

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**C++ Institute:** Certified C++ Programmer (2025)

**Scrum Alliance:** Scrum Certified Product Owner (2020)

**ISTQB:** Certified Software Tester (2019)

## EXPERIENCE

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### Software Engineer

May 2021 – Jan 2022

*Shuttlerock Ltd*

*New Zealand*

- Organized and presented lightning talks for colleagues on topics ranging from random number generation to the fundamentals of hashing, testing techniques, and IDE/Git tips and tricks.
- Implemented a web-based markdown editor for embedded video frame annotations, enabling clients to format feedback and streamlining asynchronous communication between clients and creatives across timezones.
- Pioneered automated BDD regression suite with head of QA, reducing overall deployment lead times by 91.67%.

### Developer Intern

Jun 2020 – Dec 2020

*Tatou Technologies Ltd*

*New Zealand*

- Introduced performance monitoring in mobile applications to help reduce app loading times.

### Product Owner

Oct 2019 – Mar 2020

*YR Live Ltd*

*London, UK*

- Defined product roadmap and technical architecture for large-scale online-store platform integration.
- Collaborated with enterprise clients in the UK, Japan, and Sweden to integrate YR Live's on-demand print system into online store platforms.
- Led company-wide workshops on Scrum practices and Agile methodologies, enhancing working relationships between the project management team and the dev team by fostering transparent communication.

### Software Engineer

Sep 2018 – Oct 2019

*Teleportr*

*London, UK*

- Managed automated deployments of three iOS apps to the App Store.
- Developed a visualization tool for website analytics to inform critical launch decisions and resource planning.
- Streamlined CI/CD pipeline and reduced manual errors by integrating scripted release management.
- Implemented automated UI testing and performed regression testing for iOS apps.

### Mechatronics Developer Intern

Oct 2017 – Oct 2018

*CENIT Ag*

*Stuttgart, Germany*

- Commercial placement while pursuing a mechatronics degree in Germany with CENIT.
- Implemented in-app documentation system for features of FastSuite Edition 2, CENIT's industry-leading enterprise native Windows application for offline programming, simulation, and commissioning of industrial robotics.
- Developed frontend features for FastSuite Edition 2 using C#, XAML, and .NET framework.