Roy **Lu** | SOFTWARE DEVELOPER

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Work Experience

Game Programmer (Unity) ⍟   *Oakville, ON*
RESEARCH | ARCHIPELAGO OF DESIGN   *Oct 2024 – Current*
- Collaborated with a **multidisciplinary team** on Inner Alliance, a DEI-focused educational strategy game for military organizations.
- **Created development tools** to support the creation of diverse and visually rich environments including a **procedural hex mesh building**, **voxelization**, **advanced shader techniques**, and **custom fog rendering**.
- Architected a scalable and maintanable codebase following **MVP architecture** and **SOLID principles**.
- **Accelerated development speed by 50%** by developing **in-editor tools** for rapid iteration and efficient workflows.
- Maintain **clear and concise documentation** of code architecture and workflow processes to support developers and designers.

Backend QA Systems Analyst   *Toronto, ON*
INTERNSHIP | PROOFPOINT   *May 2020 – Aug 2021*
- Boost **software validation** and **operating efficiency** by designing automated and manual test solutions for **backend microservices** for a large-scale SaaS security platform.
- Developed and maintained **custom python tools and jobs with Jenkins over a CI/CD pipeline** to simulate production environments, **optimizing testing workflows and enhancing developer productivity**.
- **Spearheaded end-to-end testing** for a new platform migration project, owning **regression and performance testing**, and working closely with developers to **determine memory bottlenecks under heavy load.**
- **Accelerated testing pipelines by 300%** and replaced outdated systems by building a **multi-threaded WPF tool** for bulk mail processing at a **company hackathon**.

Projects

Ubisoft Next 2024 (Individual) ⍟   *C++, OpenGL*
3D, TURN BASED, STRATEGY GAME THAT PITS YOU 1V1 AGAINST ANOTHER PLAYER AMIDST A DYING STAR.
- Built a **custom 3D rendering engine** using OpenGL and a line-drawing API with projection, culling, and meshes
- Implemented advanced engine features including a **ECS architecture**, **vertex shading, collision detection, and a particle system**, enhancing visual quality and gameplay interactivity.

Dungeon Company (Technical Lead) ⍟   *Steam, C#, Unity*
A ROGUE-LIKE CARD BATTLER WITH THOUSANDS OF DOWNLOADS AND POSITIVE REVIEWS ON STEAM
- Authored **technical proposals, system diagrams, and architecture plans** focused on event-driven design and reducing coupling through clean, pattern-driven solutions
- **Managed a team of 4 programmers** across gameplay and UI, organizing sprint planning, assigning tasks via a Kanban board, and hosting weekly meetings
- Collaborated with design, art, and production leads to define scope, establish pipelines, and align on project goals

Education

Sheridan College   *Oakville, ON*
COLLEGE GRADUATE CERTIFICATE IN ADVANCED GAME PROGRAMMING   *Sep 2023 – Jun 2024*
  Teaching Assistant for Computer Math I and tutor for Advanced Game Programming

University of Toronto Mississauga   *Mississauga, ON*
HONOURS BACHELOR OF SCIENCE IN COMPUTER SCIENCE   *Sep 2017 – Jun 2022*
  Web Developer for the Digital Enterprise Management Association and the CCIT (Com. Tech) Department

Skills

Technical Skills: Dated Oriented Design, Graphics Pipelines, Vectors & Matrices, SQL Databases, UI/UX, Networking
Programming: C# (Proficient), Python (Proficient), C++ (Proficient), JavaScript (Proficient)
Software: Unity, Visual Studio, Git, Jira
Soft Skills: Effective Communication, Organization, Problem-Solving, Empathy, Adaptability

Awards

Mar 2024	**Ubisoft NEXT Finalist**, Independent C++ **game built within 72 hours**, recognized for advanced 3D graphics rendering and innovative gameplay.	*Ubisoft*
Aug 2024	**Gaming Garage 2nd Best Game & 2nd Best UI**, For excellence in user interface design and engaging game mechanics.	*CNE*