SAMUEL LAPORTE

Junior Software Engineer

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📍 **Montréal, Canada**

STRENGTH

💡 Effective problem solving

When faced with complex challenges, I demonstrate creativity and perseverance to find effective and pragmatic solutions, leveraging my analytical skills and critical thinking.

🚀 Promoter of technological advancement

Driven by a passion for new technologies, I am constantly on the lookout for the latest advances and I am committed to integrating them strategically to stimulate innovation and improve our solutions.

💬 Active collaboration and communication

I try to foster an open environment where we can harness each other's individual strengths to solve problems collectively.

PERSONAL PROJECTS

Design of a Raytracing machine: Nori

Student exchange project with renowned researchers from EPFL, NVIDIA and Intel Graphics

- Implemented key features like point light, dielectric materials, lighting by environment, warping by normals, etc.
- Optimized software performance with multi-threading
- Optimized the performance of the algorithm with the integration of versatile multi-threaded data structure (Octree)

Design of a gaming engine: OlympusForge

Ongoing design and development of a game engine to deepen my knowledge of game software development

- Development of robust systems, including ECS systems, platform-independent APIs and multi-threaded job systems
- Research and implementation of best practices to design robust and scalable applications
- Experimenting with shaders (GLSL) to optimize graphics performance
- Design of camera systems (orthographic, perspective) to optimize the user experience
- Gaining a better understanding of software already available (like Unity or Unreal Engine), which allows me to use it more intelligently

EXPERIENCE

2024 - 2024

Montreal, QC, Canada

- **Final study project: DevOps**

  CAE

  Led a team of 4 members as part of a student project aimed at adding Linux support for an internal builder (Java application).
  - Analyzed and documented the project needs according to client requests
  - Created UML diagrams to represent the application architecture.
  - Modernized the architecture following current design patterns.
  - Documented and implemented changes to improve maintainability and scalability

EXPERIENCE

2022 - 2022

Montreal, QC, Canada

- **Full Stack Intern**

  Uzinakod

  4-month internship to develop a web application in a team of 8 developers
  - Developed software using *Angular* and *.NET* in close collaboration with the team
  - Verified the code quality of my peers through pull requests
  - Created and maintained unit and integration tests with *Cucumber*
  - Observed inefficiencies in the development process. Presented the use of DevContainers and Docker as a new development tool in a meeting with team leads

2021 - 2021

Joliette, QC, Canada

- **Analyst/developer intern**

  Bridgestone

  4-month internship to develop a security camera visualization application
  - Developed a web application allowing the distribution of security cameras with *AngularJS* and *.NET*
  - Tested the performance of the web application in production (latency, bugs, etc.)
  - Prototyped computer vision defect detection software with *OpenCV*
  - Participated in additional projects, analyzing various software for collecting temporal data
  - Présenté les résultats et les connaissances acquises au directeur et au superviseur du département

EDUCATION

2020 - 2024

- **Bachelor of Software Engineering**

  Polytechnique Montréal
  - Video Game Architecture (LOG8715)

2023 - 2023

- **Échange étudiant**

  Swiss Federal Institute of Technology, Lausanne
  - Advanced Infographics (CS440)
  - Parallelism and Concurrency (CS206)

SKILLS

Unity3D   Unreal Engine   C#   C++   Cross-Platform Development   Agile Development (Scrum)

Java   JavaScript   SQL   Angular   Blazor   .NET   Visual Studio