

# BASSAM KAMAL

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**OBJECTIVE:** Third-year Computer Science student passionate about full-stack development, systems design, automation, and AI/ML applications. Seeking a tech internship to leverage expertise in procedural generation, algorithm optimization, and scalable software solutions.

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## EDUCATION

Bachelor of Science in Computer Science with a specialization in Video Games      Sept 2022 - Present  
University of Prince Edward Island, Charlottetown, PE      **GPA: 3.8**

**Relevant Coursework:** Algorithms, Data Structures, Linear Algebra, Computer Graphics

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## TECHNICAL SKILLS

- **Programming:** C++, Python, Java, JavaScript, GLSL, C#, SQL
  - **Frameworks & Libraries:** OpenGL, PyTorch, TensorFlow Lite, Assimp, React
  - **Concepts:** telemetry data pipelines, Memory Optimization, Procedural algorithms, REST APIs
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## PROJECTS

### **UPSTART : Business Automation Platform | React, TensorFlow, Python, Firebase**

- Built an AI-driven SaaS platform automating company departments with real-time data visualizations.
- Designed and deployed telemetry-style data pipelines for system monitoring and cloud deployments.
- Finalists in the Harry W. MacLauchlan Program, demonstrating product-market validation.

### **Custom Game Engine | [repo](#) | C++, OpenGL**

- Engineered an optimized game engine with spatial culling and a real-time PBR lighting solution.
- Developed a text renderer handling 50k+ characters with localization, word wrapping and hyphenation.
- Implemented a particle system supporting 50k+ particles with complex affectors & blending techniques.
- **Transferable Skills:** System Architecture, Memory management, Algorithmic optimization

### **Procedural Cityscape Generator | [repo](#) | C++, OpenGL**

- Created a customized Voronoi generation algorithm for procedurally splitting polygons.
  - Optimized rendering using array texture, minimizing draw calls and tripling performance.
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## WORK EXPERIENCE

### **Teaching Assistant**

University of Prince Edward Island, Prince Edward Island, Canada      Jan 2025 - Present

- Clarifying course material, debugging code, and guiding students through programming challenges.
- Assisting 40+ individual students' conceptual understanding in CS and Math-related subjects.

### **Campus Events Coordinator**

UofCanada Campus, New Administrative Capital, Egypt      Jan 2023 - July 2024

- Led tech workshops on Git and Python, increasing student participation by 20%.
- Engineered a Python-based event-scheduling tool, saving 10 hrs/week in administrative activities.

**Languages:** Fluent in English and Arabic