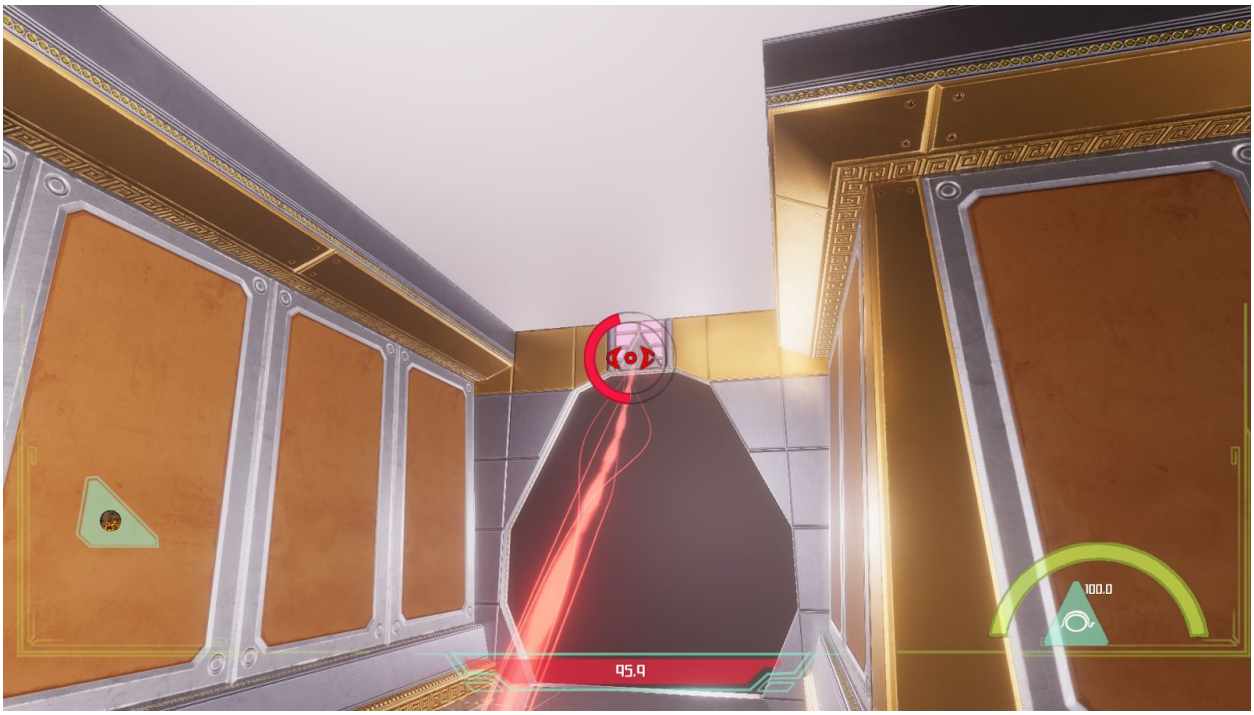
COMP350: Optimization: Part A

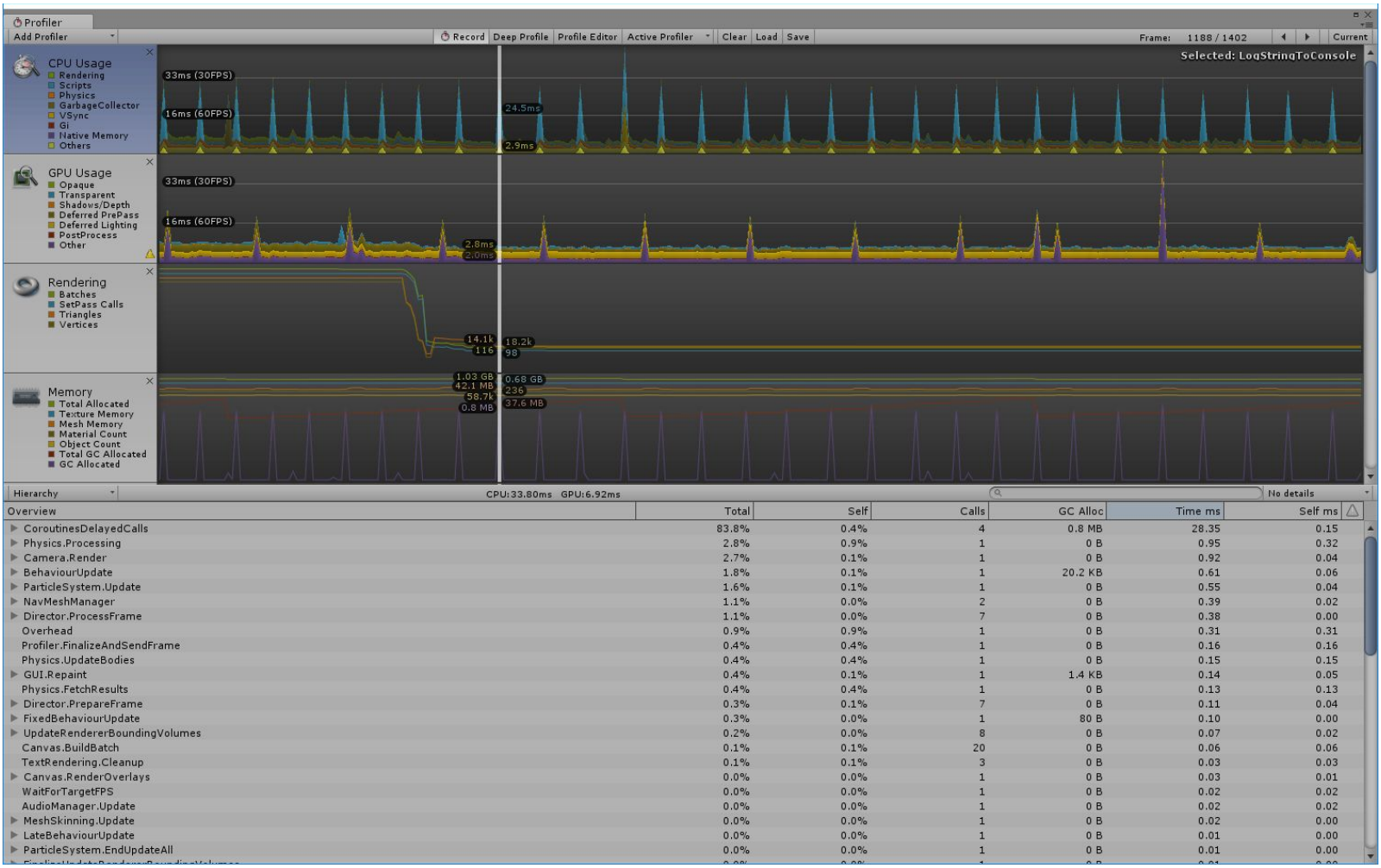
What are the details of the project you are optimising?
The project I'm optimising is the COMP340 group game project "The Gates of Amenti". It's a first person metroidvania game in a sci-fi/ancient egyptian setting. Currently laptops and anything below an a recent i5 struggle to run it. I intend to optimise it for both PS4 and either the system requirements my team decide on or the PC equivalent of the PS4 specification.



What language/engine are you optimising?
The language used is C# in Unity 5.6.3f1.

What tools are you going to use?
The tools I'll use to optimise are the built in Unity profilers and the PS4 profilers. For the Unity profiler the CPU and memory profilers look the most useful as an initial profile of my COMP340 project showed consistent spikes on those two areas. The GPU profiler shows frequent spikes related to the siphon effect which is another area that will need to be optimized.

The screenshot below shows the Unity profiler on level 1 of the game running in the editor. The CPU,GPU and Memory profilers all show consistent spikes. The rendering spikes when the siphon mechanic is used in game.



Resources:

- **Unity Profiler:**
  - https://unity3d.com/learn/tutorials/temas/performance-optimization/diagnosing-performance-problems-using-profiler-window
- **Unite 2017 talk on optimization**
  - https://www.youtube.com/watch?v=_wxitgdx-UI
- **Object pooling**
  - https://unity3d.com/learn/tutorials/topics/scripting/object-pooling
  - http://catlikecoding.com/unity/tutorials/object-pools/
- **General Unity optimization tips**
  - http://wiki.unity3d.com/index.php?title=General_Performance_Tips
  - https://docs.unity3d.com/353/Documentation/ScriptReference/index.Performance_Optimization.html