



Fusion: GPU Accelerated PBD Simulator for Unity

Milestone 2 Presentation

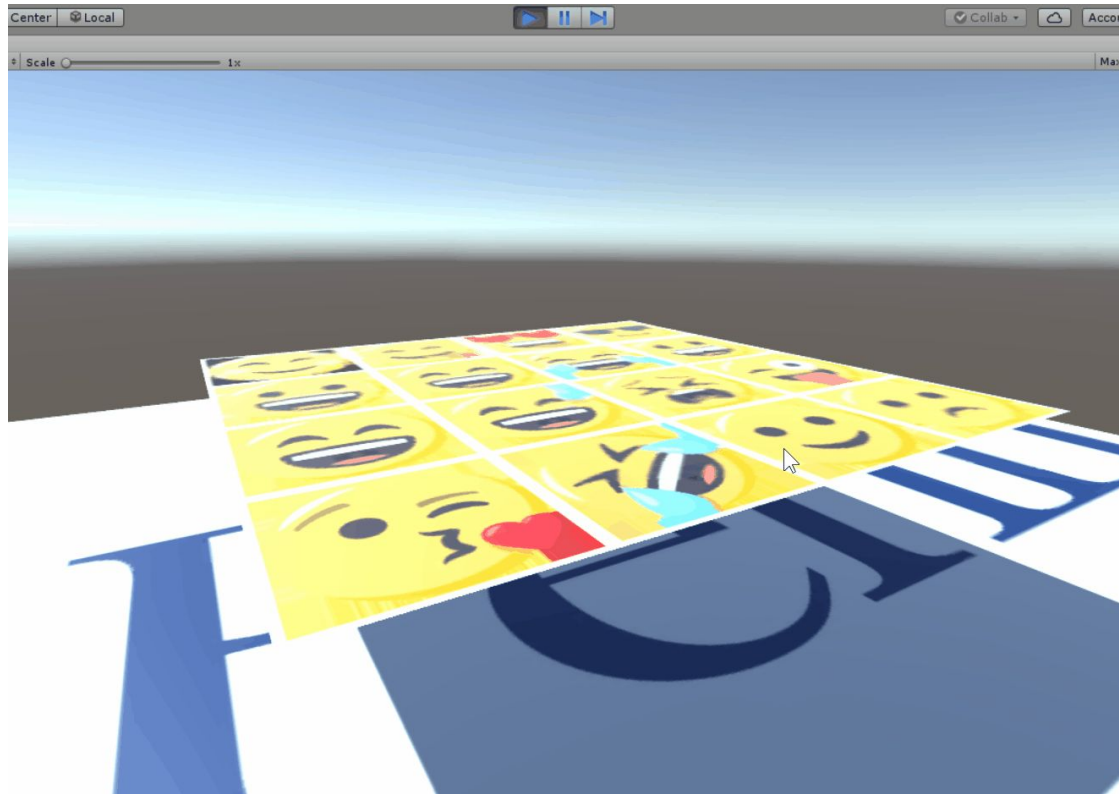
Team Jethan: Jie Meng and Yichen (Ethan) Shou

Milestone 2 Progress



- CPU side
 - Isometric bending constraint
 - Complete integration into Unity
 - Cube and Sphere collisions
- GPU side
 - Cloth simulator Completely ported into Unity Compute Shader Pipeline
 - GPU-based Jacobi solver for constraints
- Still some bugs that need fixing

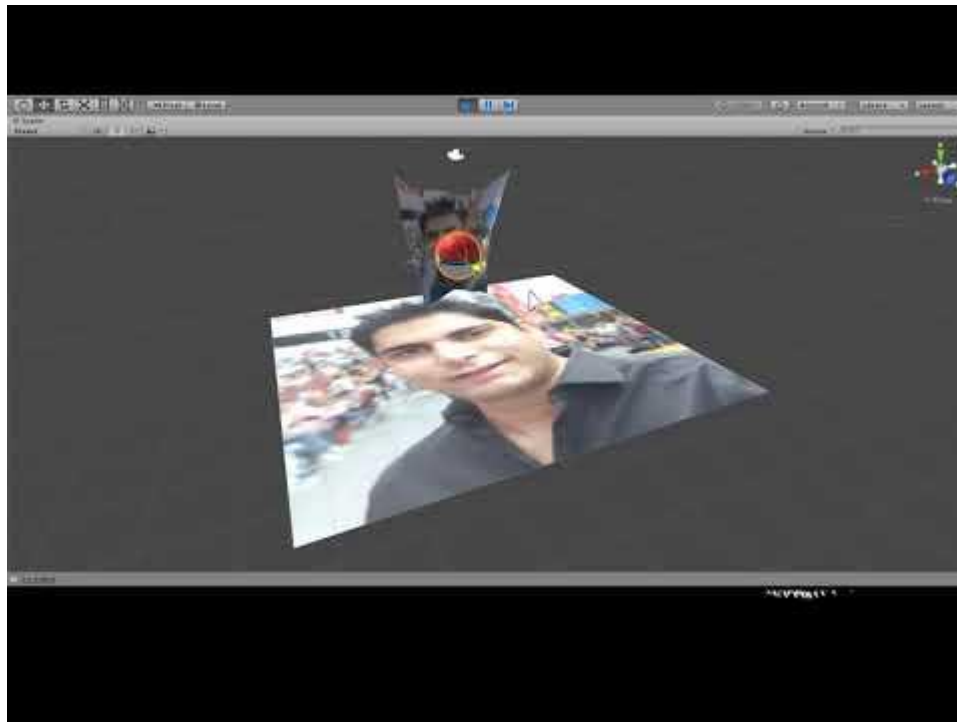
DEMO TIME: GPU cloth 1



DEMO TIME: GPU cloth 2



DEMO TIME: GPU cloth 3





Performance: from CPU to GPU

Doubled FPS for a just-working GPU version



DEMO TIME



Project Roadmap

- Milestone 2 (DONE)
 - Port CPU cloth simulator into GPU
 - Update simulator with modern techniques and collision-handling
- Milestone 3
 - Debug some cloth collision bugs
 - Implement new constraints to handle rigid-body and/or fluid simulation
 - Build an easy-to-use interface for the tool in the Unity engine
- Final
 - Combine cloth, rigid-body and/or fluid simulation into a single solver and interface
 - Make a simple demo game in Unity with the tool (maybe)



Thanks for your time!