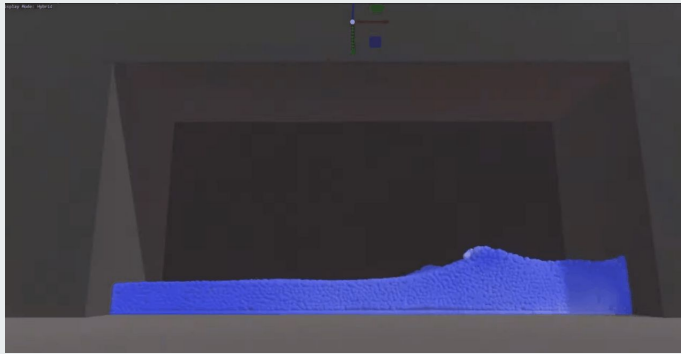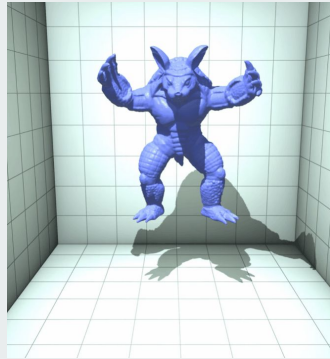# BREAKPOINT Milestone 1
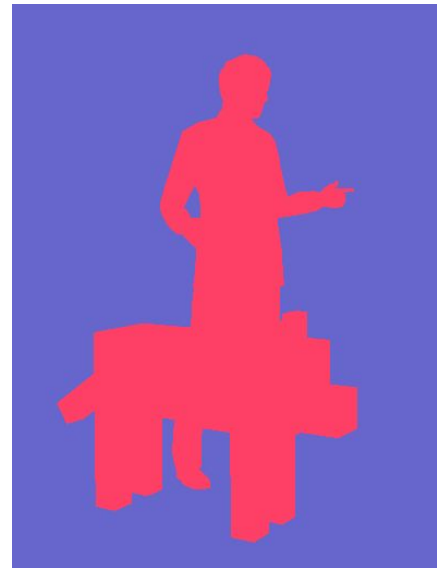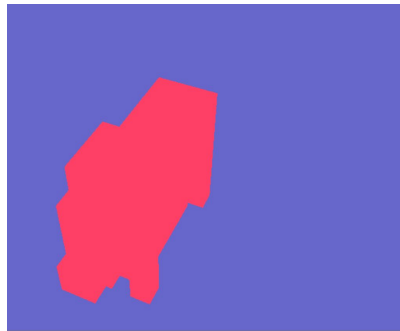

Daniel Gerhardt, Dineth Meegoda, Matt Schwartz, Zixiao (Steve) Wang

DX12 Core Progress

- Working render pipelines
- Object and scene rendering with 3d camera
- Mouse and keyboard controls for camera
- Got farther than expected - now will start helping other people
- Research and rescoping - good news!

Excluding merges, **4 authors** have pushed **38 commits** to main and **61 commits** to all branches. On main, **58 files** have changed and there have been 7,010 **additions** and 219 **deletions**.

Mesh Shading Pipeline Progress

- Basic mesh shading pipeline is functional and integrated into the engine
    - Hello Triangle!
- A lot of time spent this milestone on bootstrapping the overall engine, which was a blocker for most other work.
- Next milestone: fluid surface detection via the mesh shading pipeline.
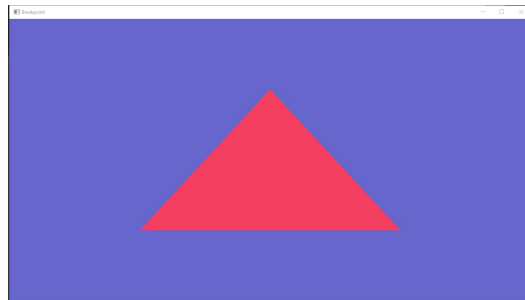
PBMPM Physical Simulation Progress

- Architected Compute Pipelines for the engine and integrated them with rendering pipelines

- Limitations:

  - 2D-PBMPM Implementation

- MS2 Goal: 3D PBMPM Implementation
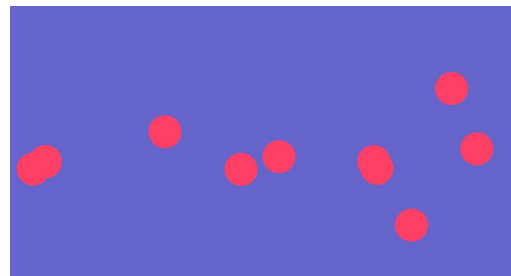
Real Time Destruction Progress

- Working on 3D PBD framework
- Limitation:
  - Try to figure out the Gram-Schmidt orthonormalization constraint and face to face constraint with multiple compute pipeline
  - Integrate the pbd particle to rendering pipeline to visualize the result
- MS2 Goal: Finished the 3D PBD Framework with simple cubic voxelization