
POF
Performance Optimized Fluids

What is POF?

- POF: Performance Optimized Fluids
- What is NVIDIA Flex?
- What is the task of Flex?

AIM

- Integrating particle-based fluid simulation into the Unity platform.
- Leaving a ready system for other people using the algorithms we have integrated.
- Determining an evaluation platform to test algorithms with test results.

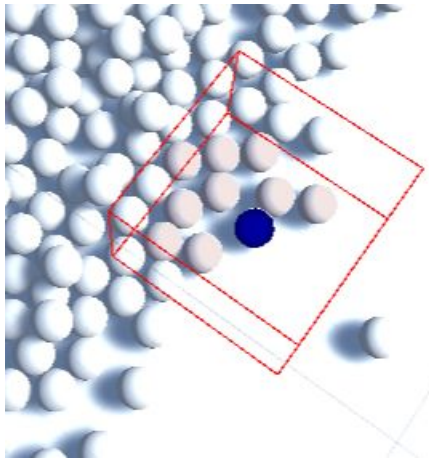

Fig 1: Hash System-1

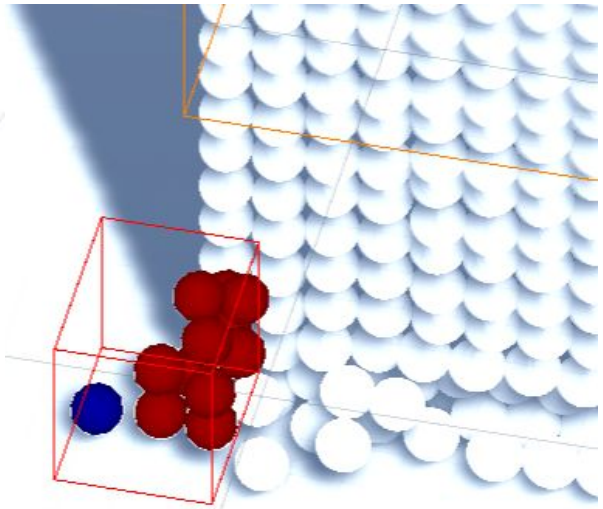

Fig 2: Hash System-2

Objectives

- Using particle-based fluid simulation through the Unity.
- Recognizing surface particles mathematically.
- Creating stable test environment for users.
- Establishing a system to comparing algorithms.

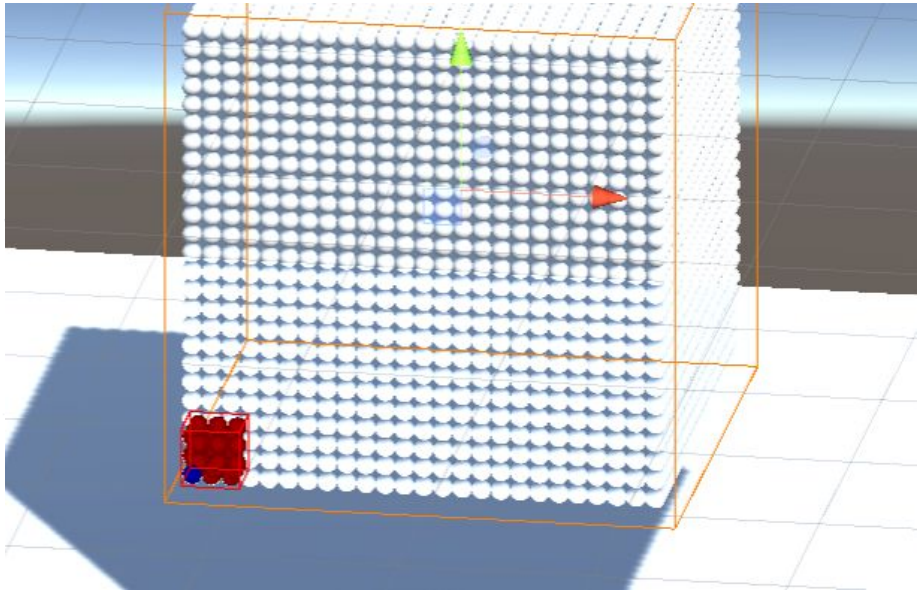

Fig 3: Perfect Cube

IMPLEMENTATİON

1-) Hash System

2-) Surface Recognition

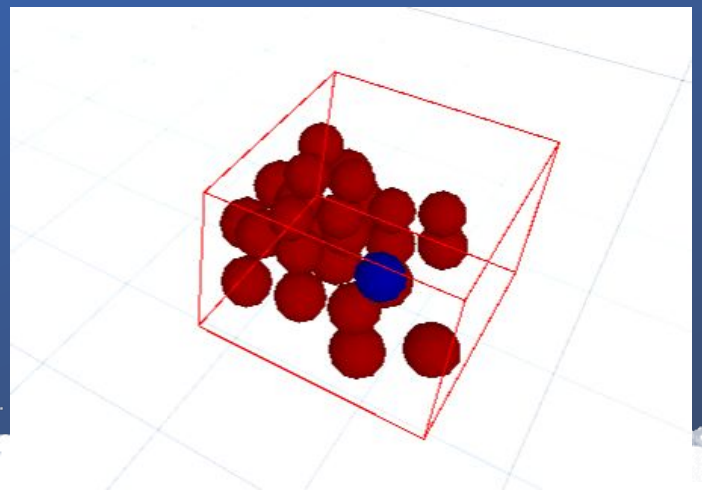

Fig 4: Tracking Particle within a Cell

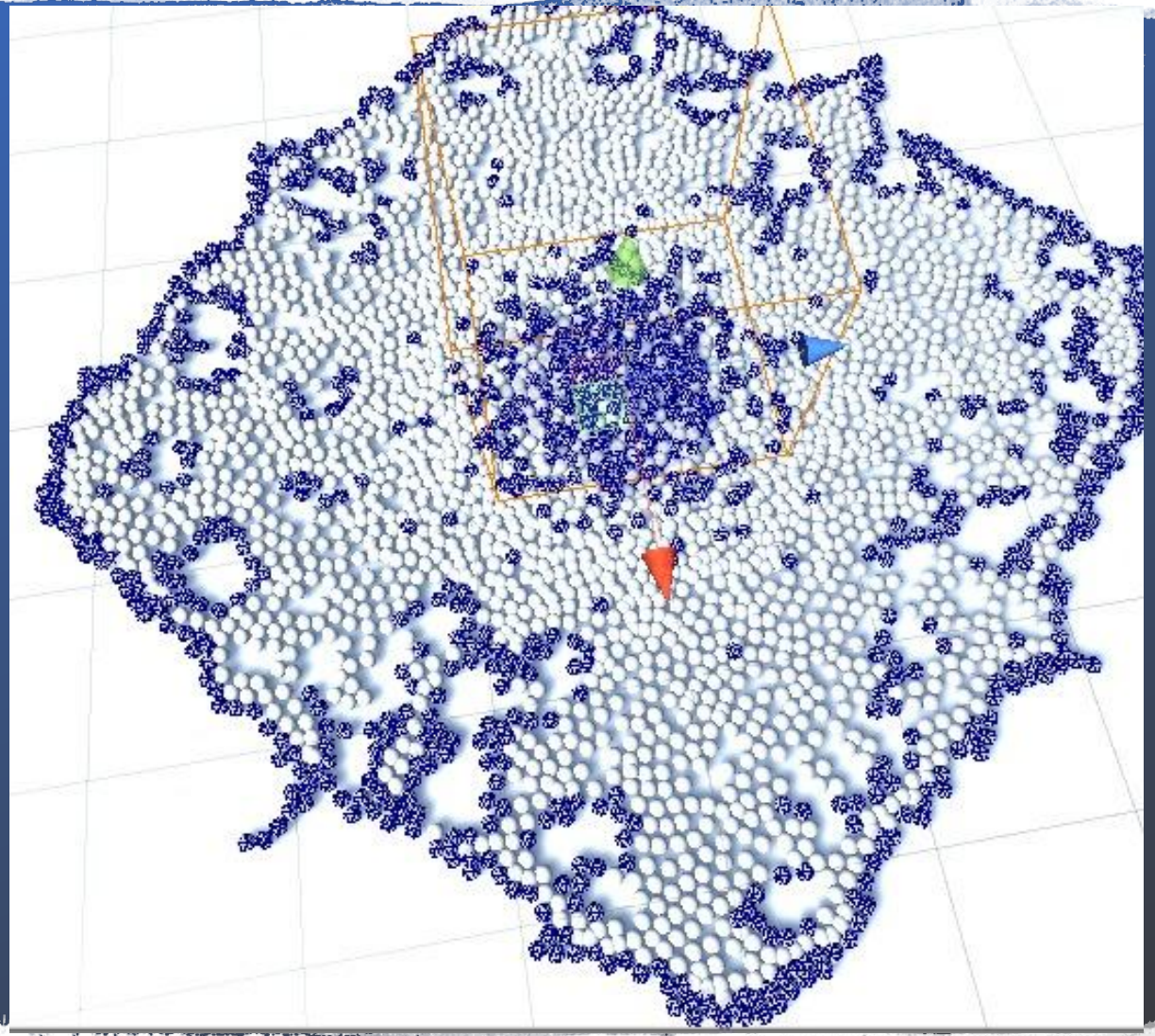

Fig 5: Finding Surface Particles

HASH SYSTEM

- What is Hash system?
- What are the benefits of Hash system?
- How we implemented Hash system?

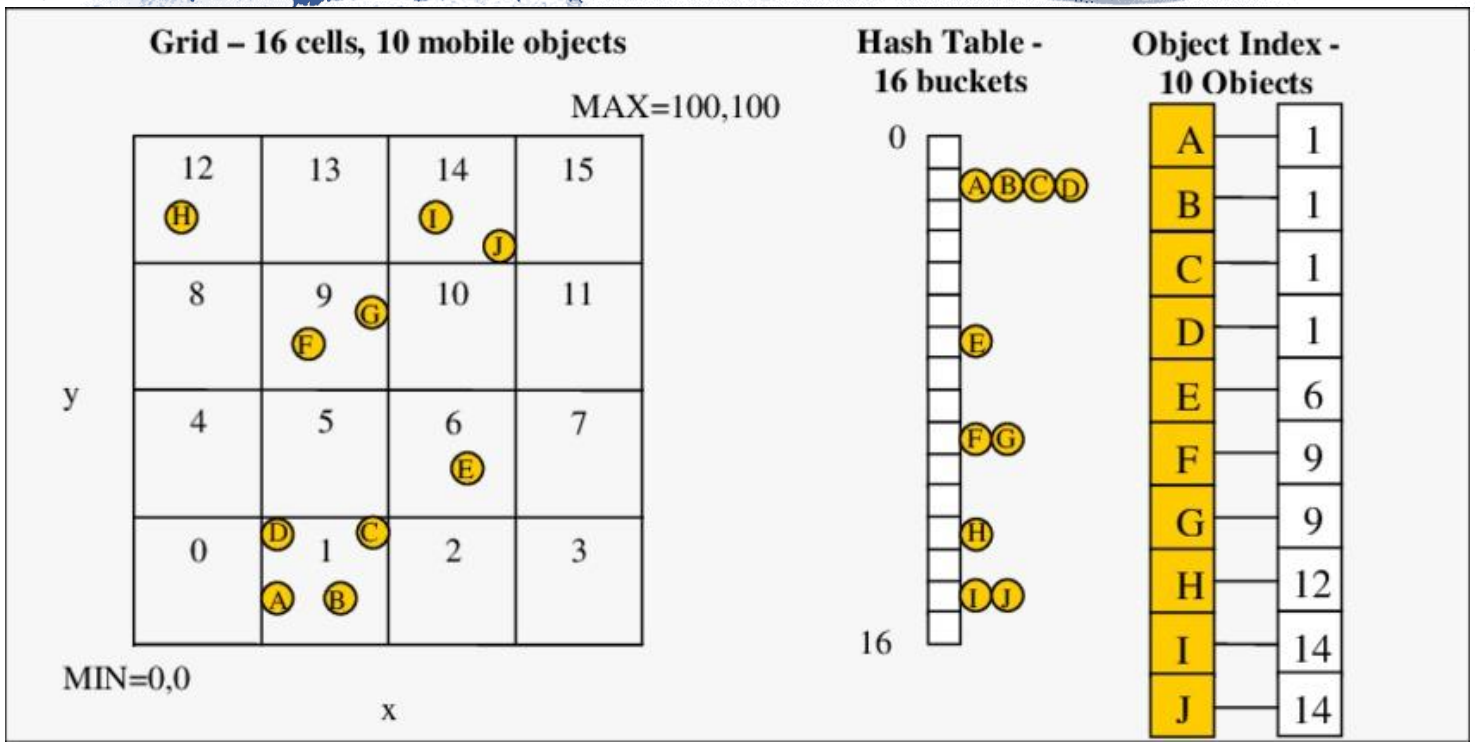

Fig 6: Hash System in 2D

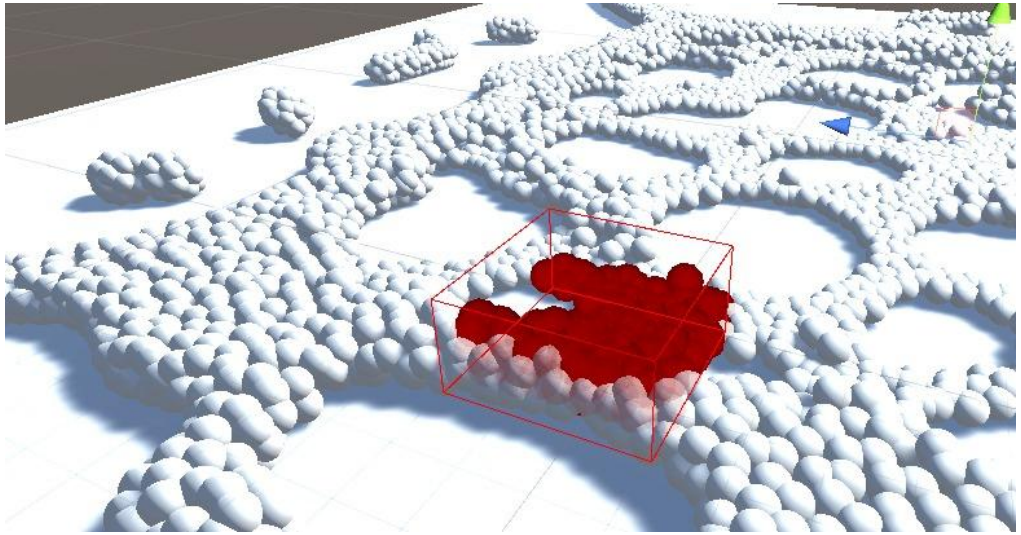

Fig 7: Hash System-4

SURFACE RECOGNITION

- What is surface?
- What are the benefits of the surface recognition algorithm?
- How we find surface?

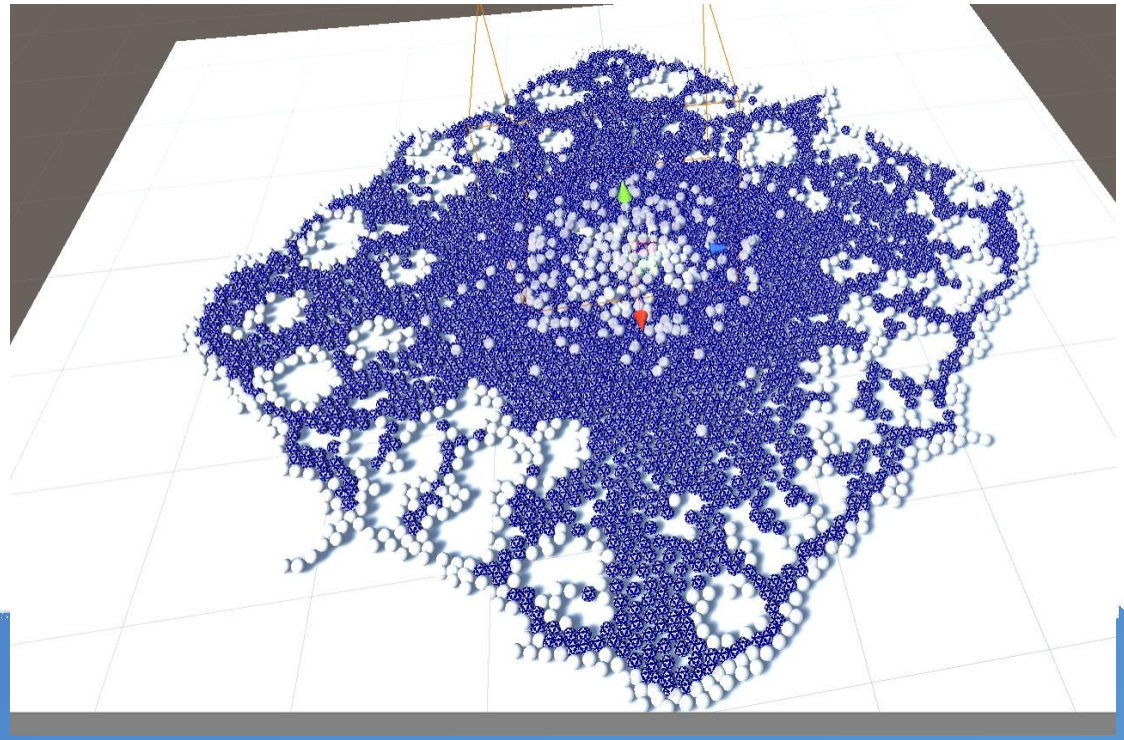

Fig 8: Inner Particles Represented with Blue in Surface Recognition

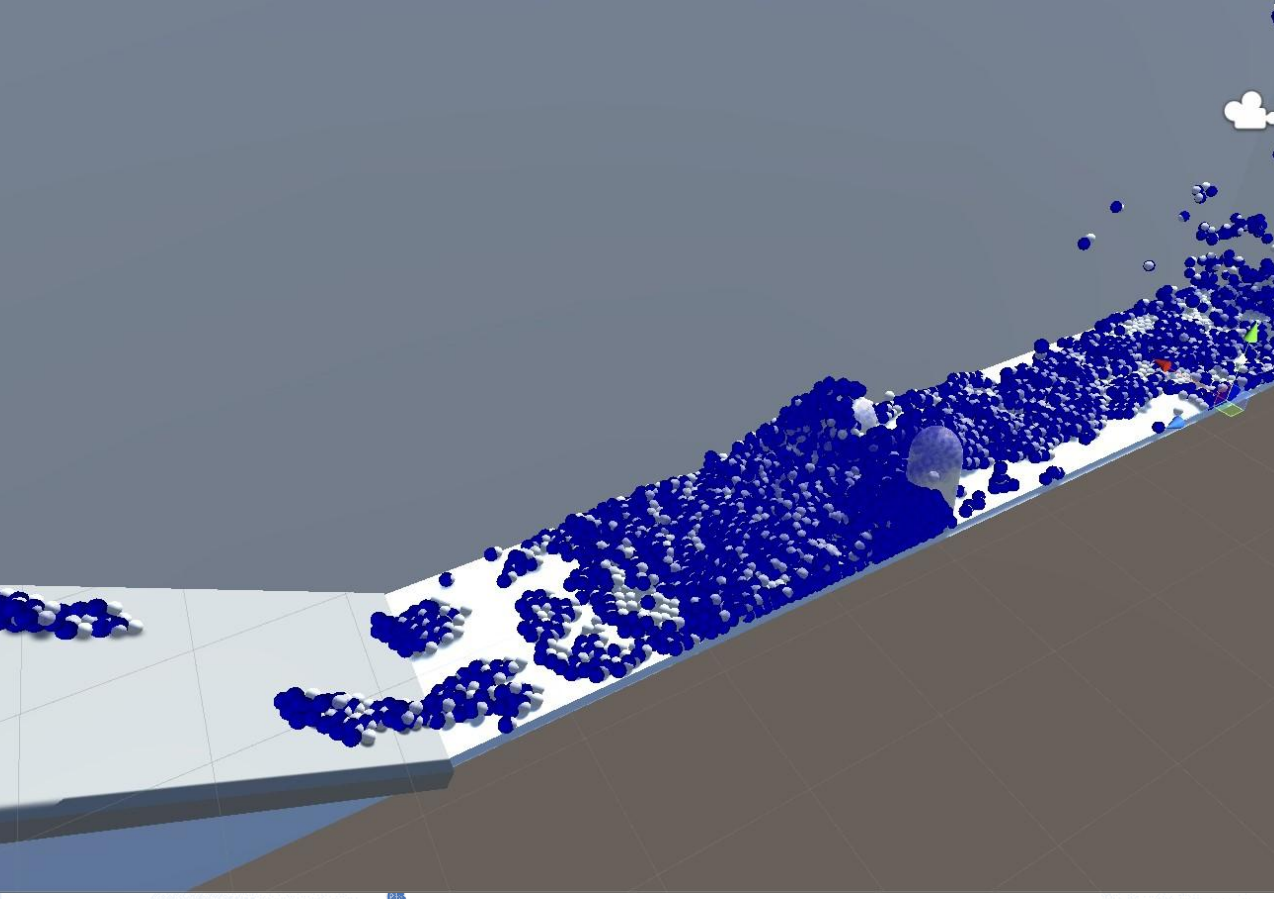

Fig 9: Test Scene-1

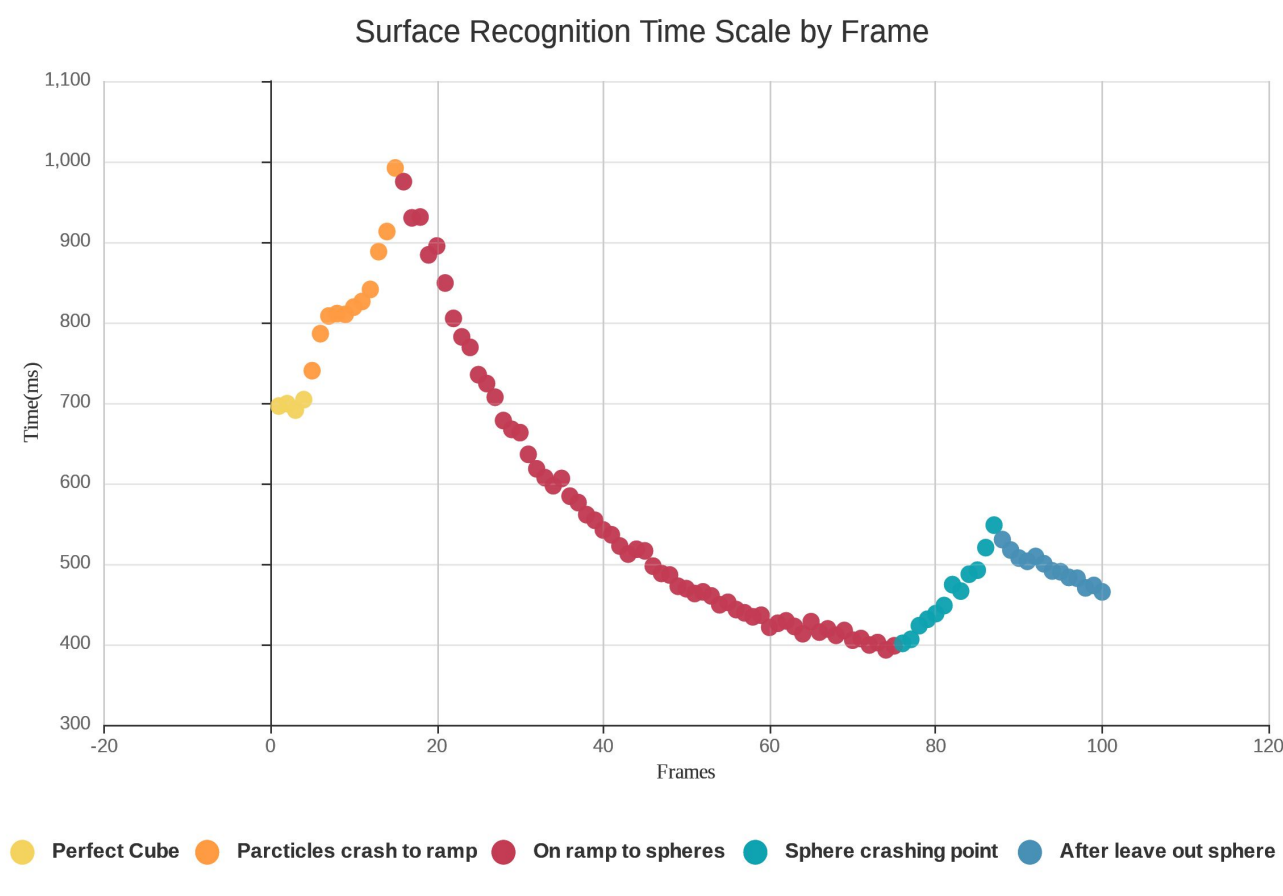

Fig 10: Surface Recognition Chart as Time-Frame

TEST RESULTS 1

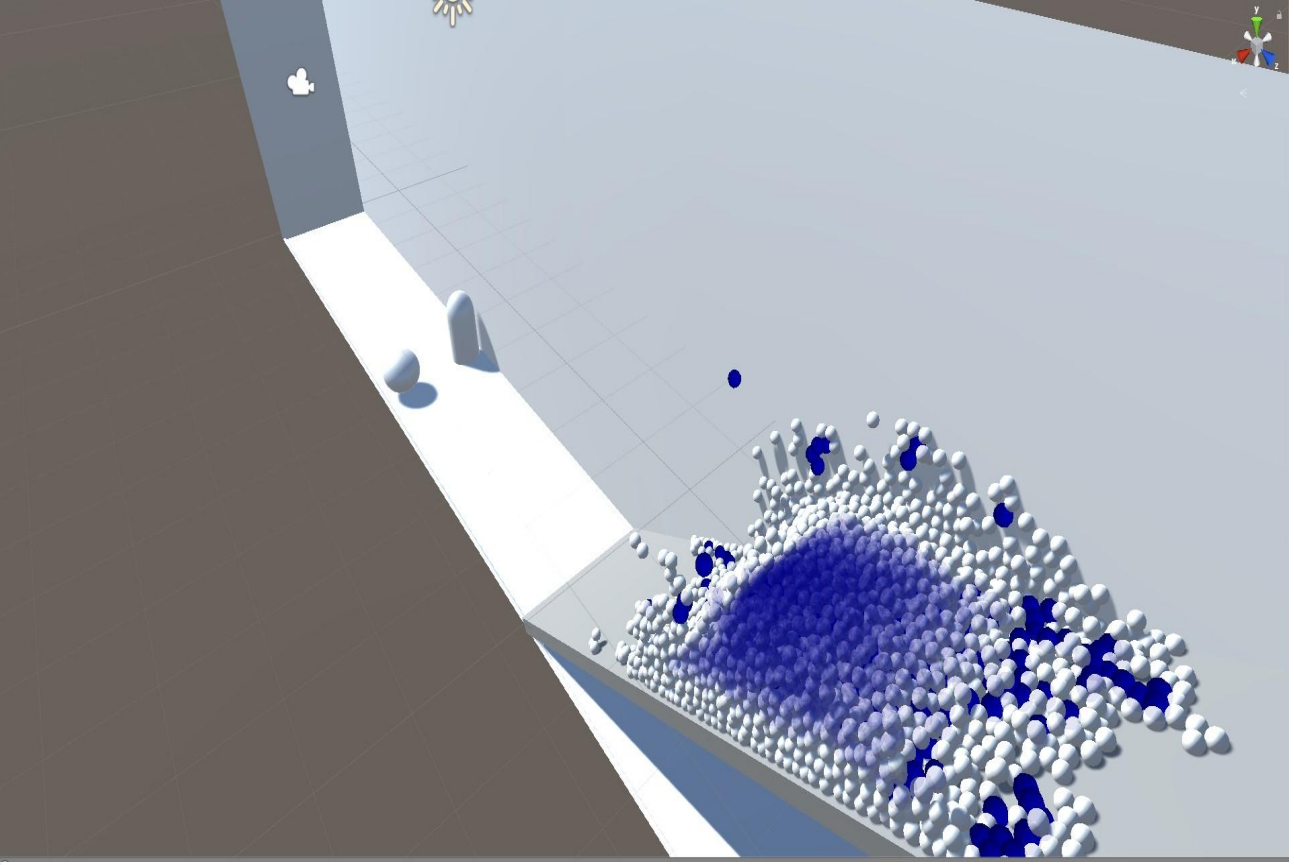

Fig 11: Test Scene-2

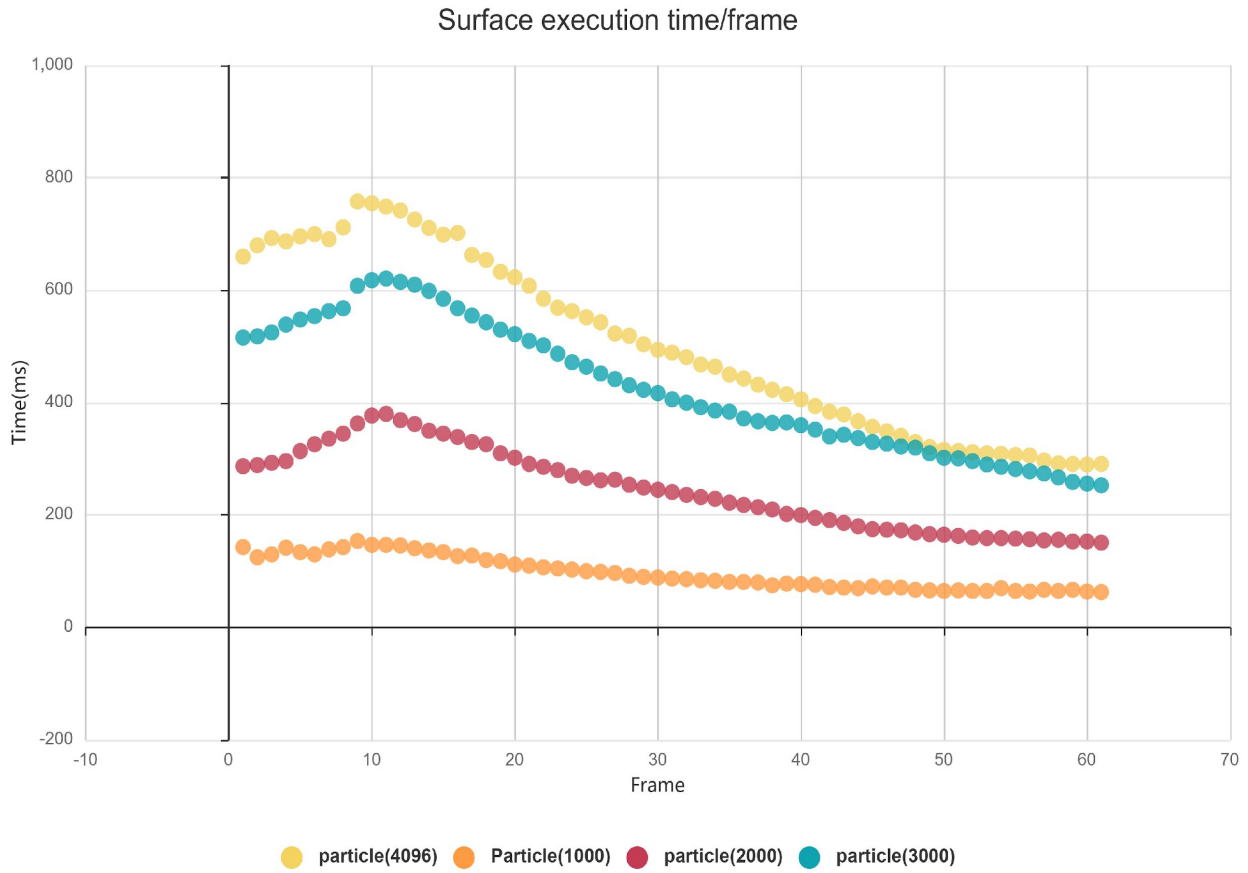

Fig 12: Surface Execution by Particle Comparison

TEST RESULTS 2

Conclusion

- Prepared a test environment for other algorithms to compare.
- Implemented various methods : Hash algorithm, Surface Recognition algorithm.

THANK YOU FOR LISTENING

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YAŞAR ÜNİVERSİTESİ