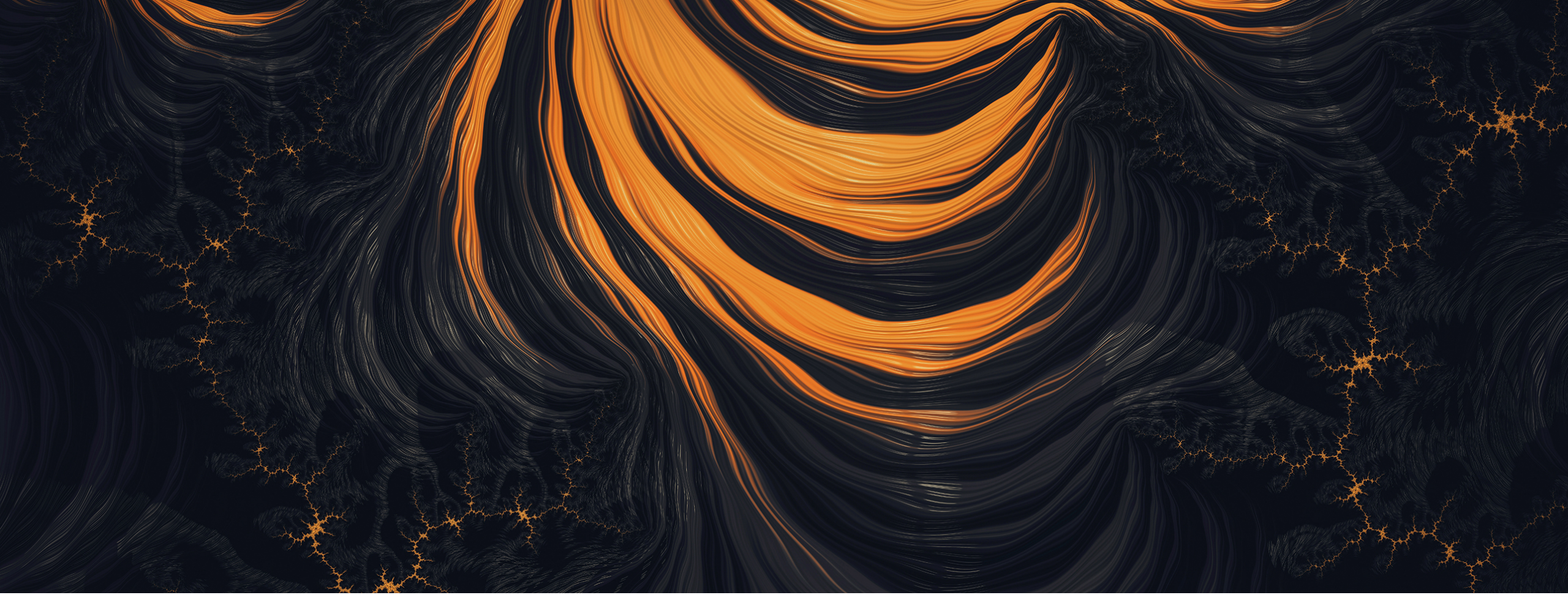


PHYSICALLY-BASED SIMULATION SOFT BODIES IN INTERACTIVE SYSTEMS AND GAMES

Group: **FlowMo**

Nihat Isik

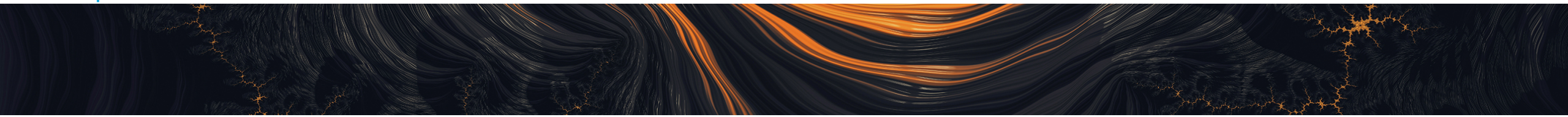
Marion Deichmann

Qais El Okaili

SIMULATION SCENARIO

- Motivation: Game with Physically-based Interactive System
- Interactive System consists of Soft-Bodies & Rigid-Bodies
- Implementation of Forces applied on Soft-Bodies & Rigid-Bodies

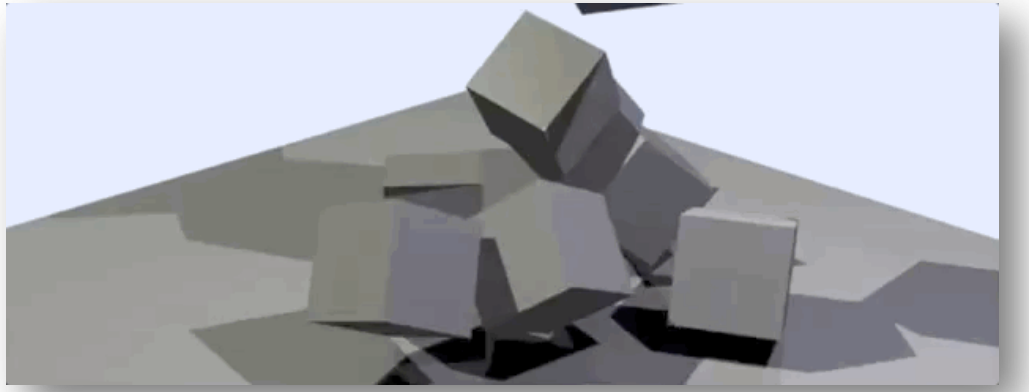
SIMULATION METHODS



- Verlet Integration [Advanced Character Physics T.J.]
- Rigid Body Simulation using Particles
- Collision Detection & Handling
- Soft-Body Simulation

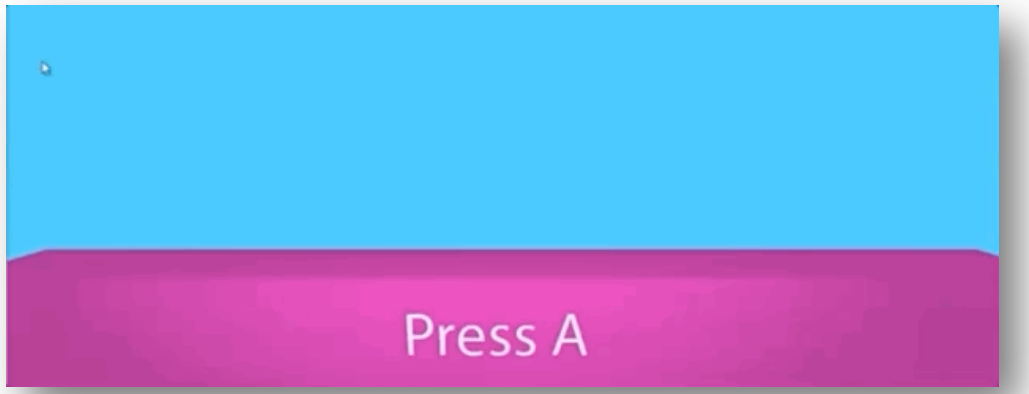
MINIMAL TARGET

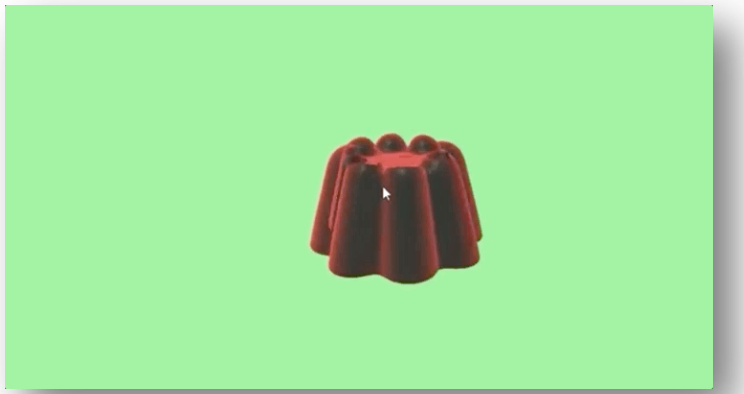
- Basic scene setup
- Rigid-bodies falling on top of each other
- Collision handling



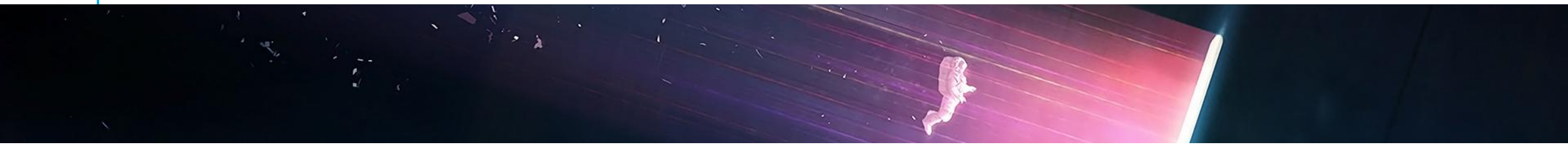
DESIRED TARGET

- Soft-Bodies using Mass-Spring Systems (Jelly-like Bodies)
- Collision Handling of Soft-Bodies
- Having Basic Interactivity





BONUS



- Rendering of Jelly-like Objects
- Mini-Game
- Sound Effects

MILESTONES

1. Set up Basic Scene
2. Rigid-Body Implementation
3. Collision Handling for Rigitd-Body
   - OBB vs OBB
   - OBB vs Sphere
   - Sphere vs Sphere
4. Soft-Body Implementation
5. Collision Handling for Soft-Body
6. Interactivity (Drag&Drop, Spawn, Move, etc.)

TIMELINE

- 06.11.19: → 1 – Basic Scene
- 13.11.19: → 2 – RB Implementation
- 20.11.19: → 3 – Collision Handling for RB
- 27.11.19: → 4 – SB Implementation
- 04.12.19: → 5 – Collision Handling for SB
- 11.12.19: → 6 – Interactivity
- 18.12.19: → 7 – Final Presentation