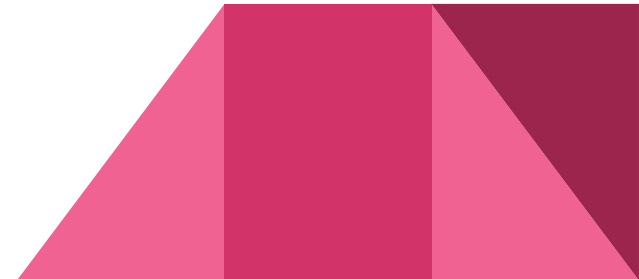


Icrowave

Lorenzo La Spina, Lukas Prantl, Tobias Weiher

Theme: Munich

- Unique place for Munich
 - Technical aspect of the water
 - Limited area of action
 - Thinking small!
-
- Wave Rider Game with focus on the graphical and simulational part
 - Creating game with a custom engine
 - ◆ Tsunami Game Engine





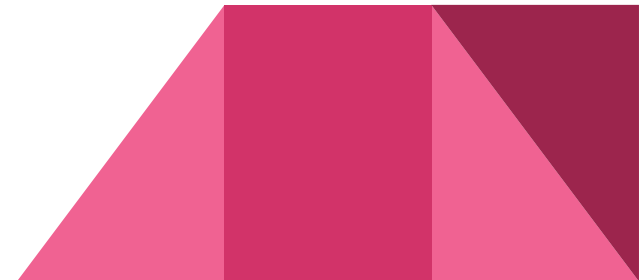
SURFING SIMULATION

**PHYSICALLY BASED WATER
TURBULENT LIQUID RENDERING**

**BIG
IDEA
BULLSEYE**

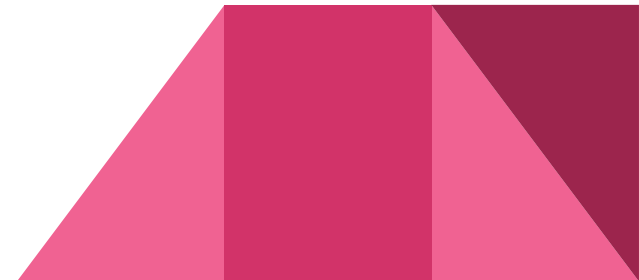
Simulation Part

- Good looking shape of wave
- Precomputed high resolution waves for fluid simulation
- At runtime particle generation of foam and spray
- Realistic interaction between surfboard and water considering buoyancy and flow forces



Graphics Part

- Hybrid visualization technique
- Raytraced water using implicit surface representation
- Two step lighting calculation
- Physically based water/environment interaction
- Rasterized environment for the scene



Input Part

Wii Balance Board

- Pro: Accurate, possibility for minigames
- Con: Not easily accessible, lack of intuitive center of mass perception

Steam Controller

- Pro: Commercially accessible, gyroscope
- Con: Huge overhead with SDK

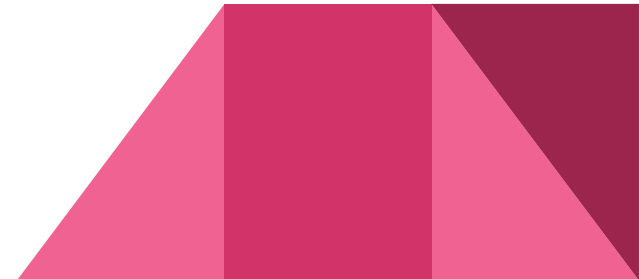
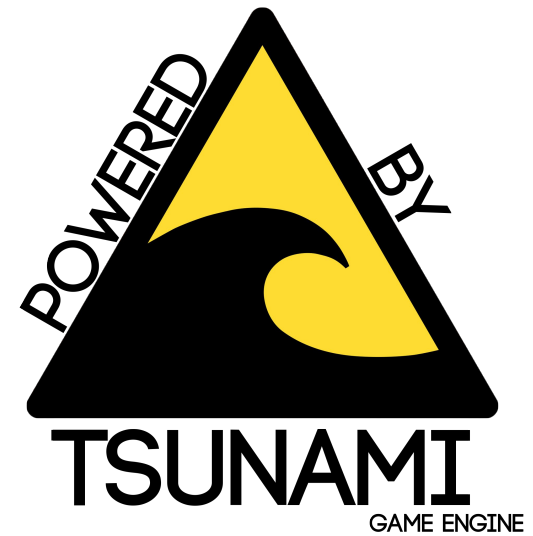
Beagle Board

- Pro: Accessible at the university, experience in using
- Con: No gyroscope, not commercial, usability ergonomics

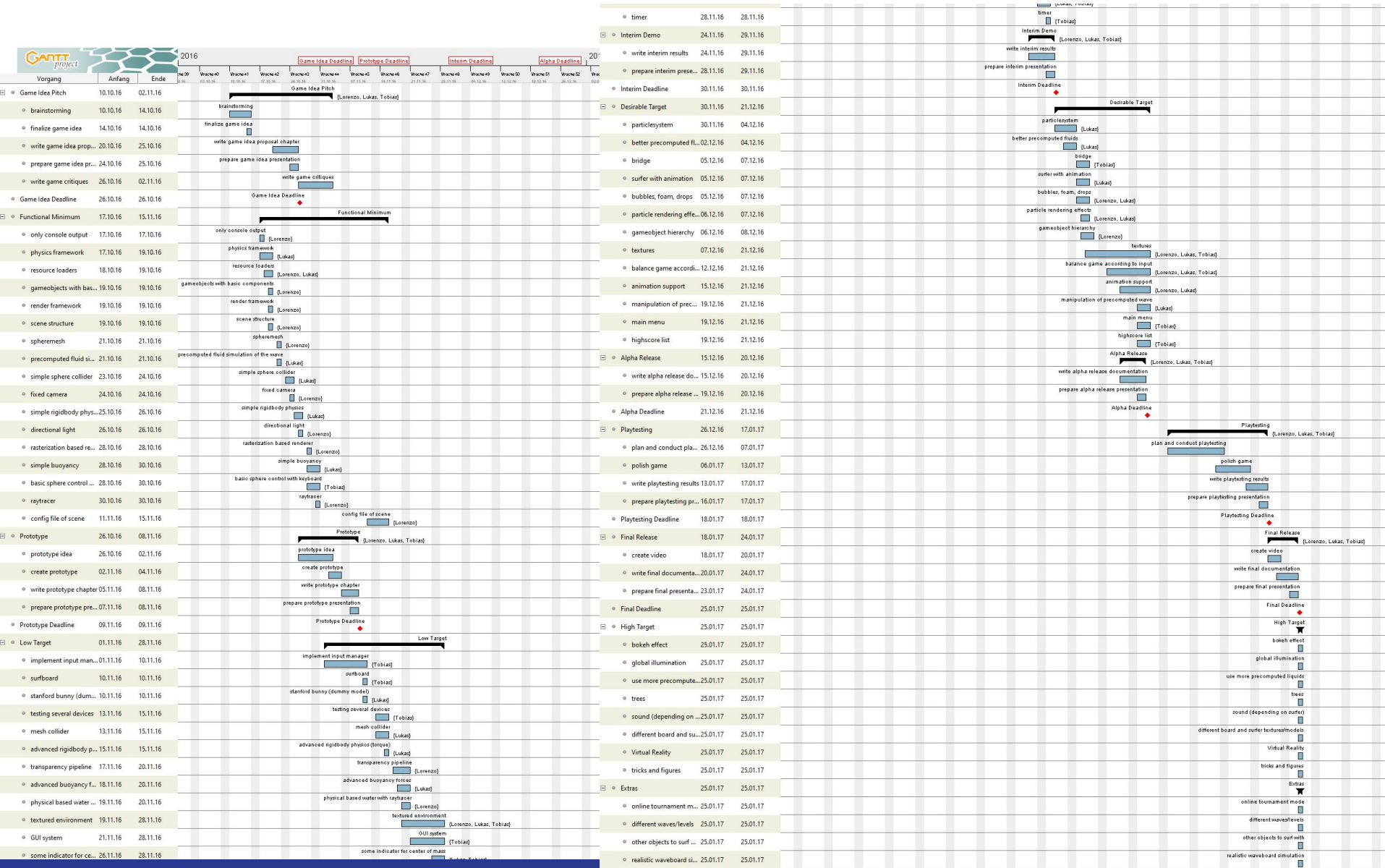


Tsunami Game Engine

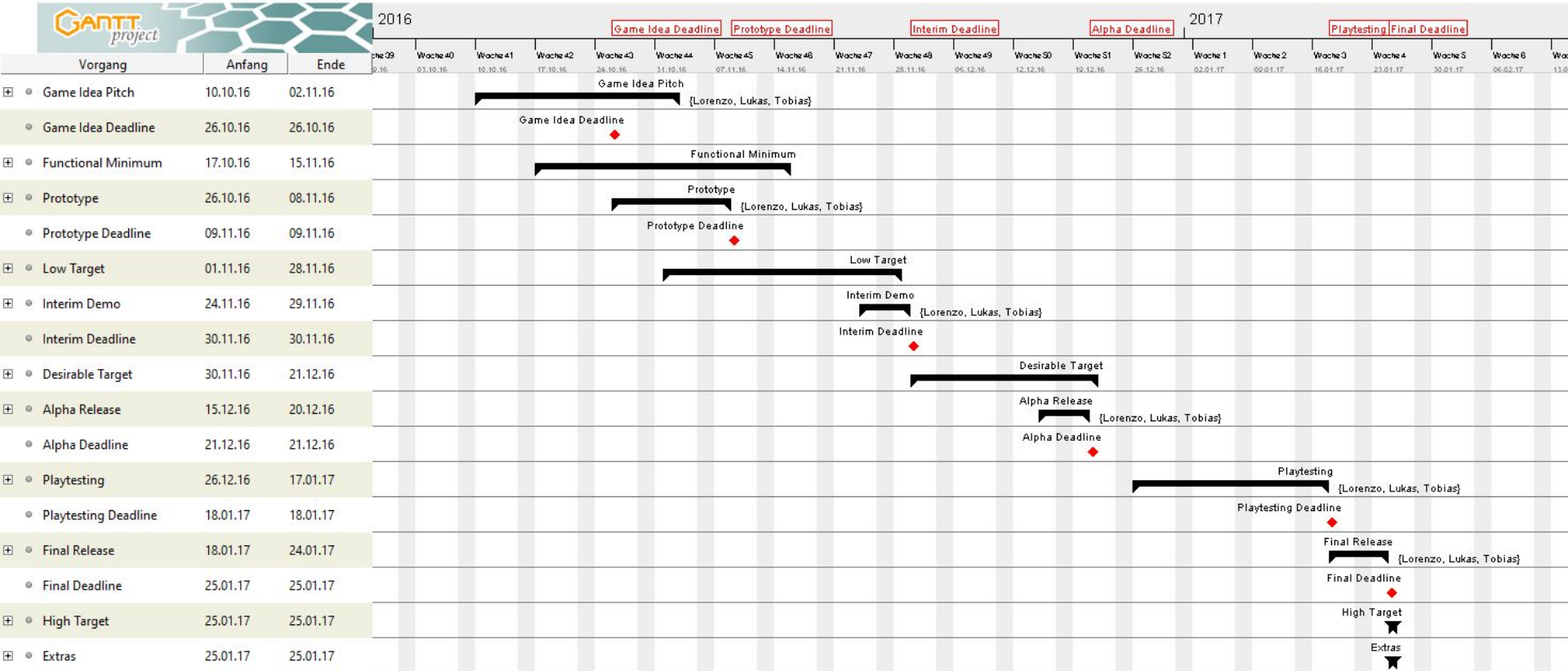
- Combining Simulation, Graphics and Input
- Custom game engine written in modern C++11
- Rendering and Physics using DirectX11 and CUDA
- Multithreading support
- Composition oriented scene management



Development Schedule



Development Schedule



Thank you!

Questions?

