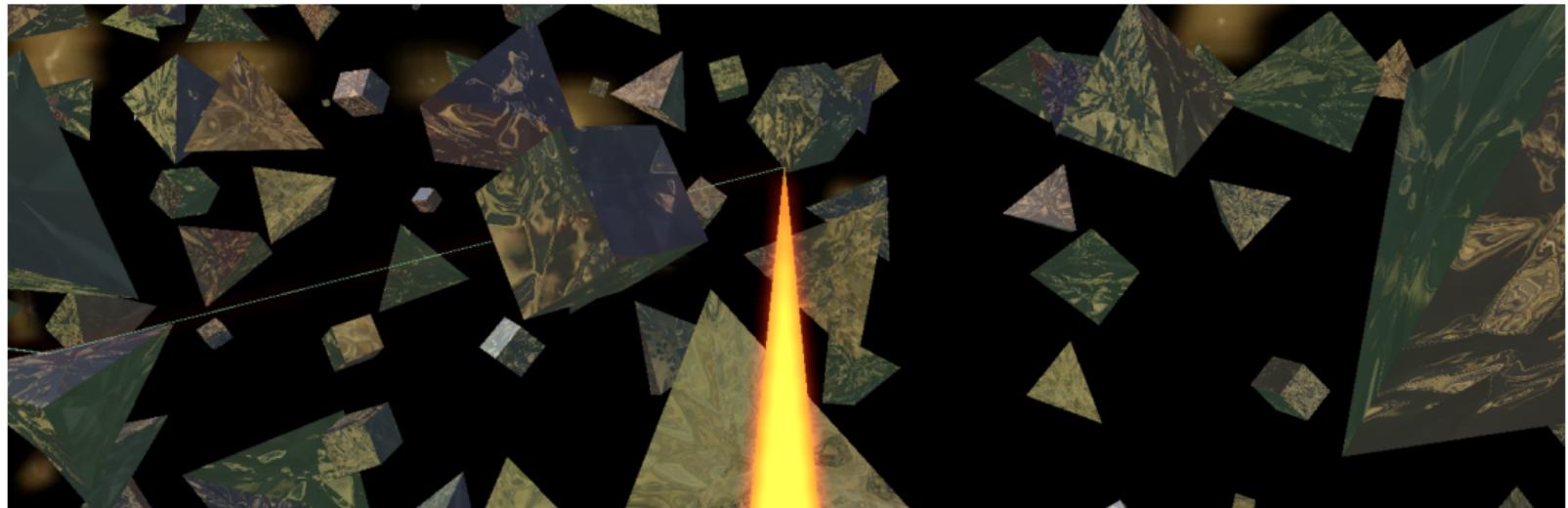


# Gem Illuminator

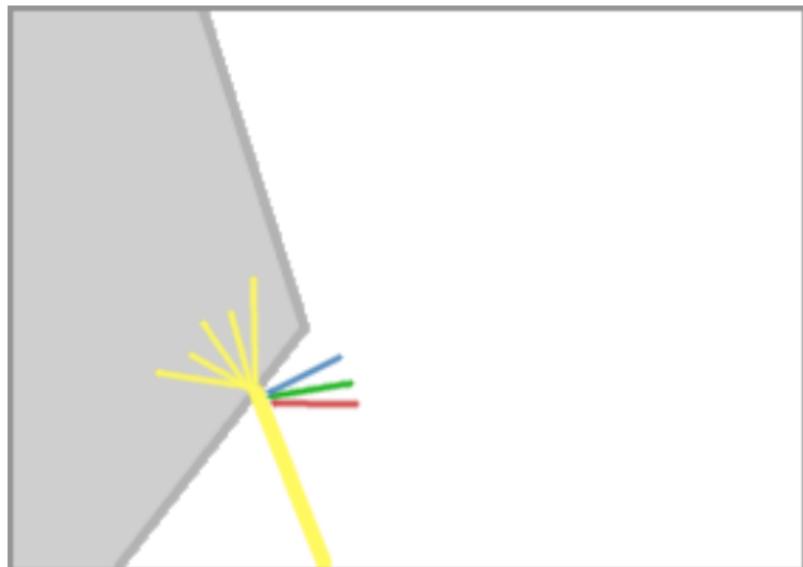
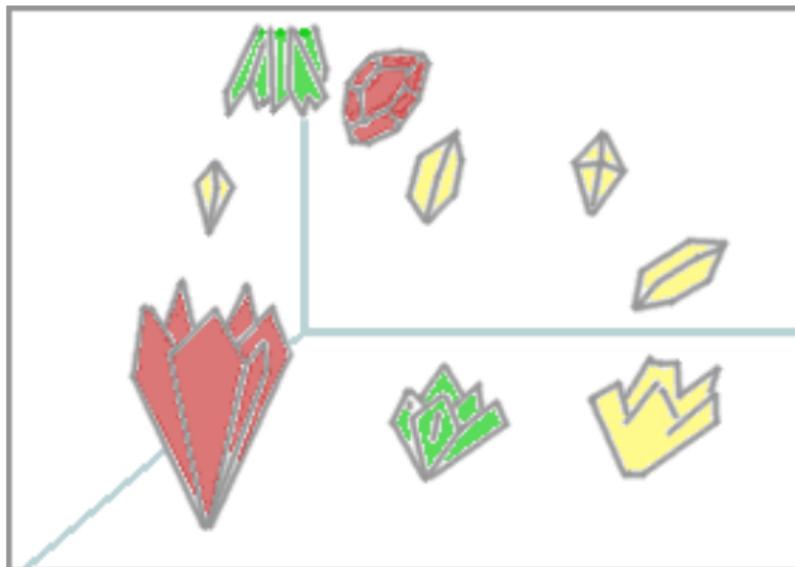
Game Programming



Pascal Lange, Sebastian Koall, Jennifer Stamm

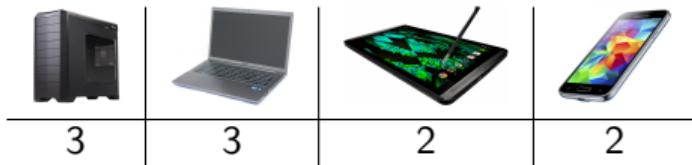
Daniel Limberger Hasso-Plattner-Institut WiSe 2014/2015

# Motivation und Spielidee



# Demo

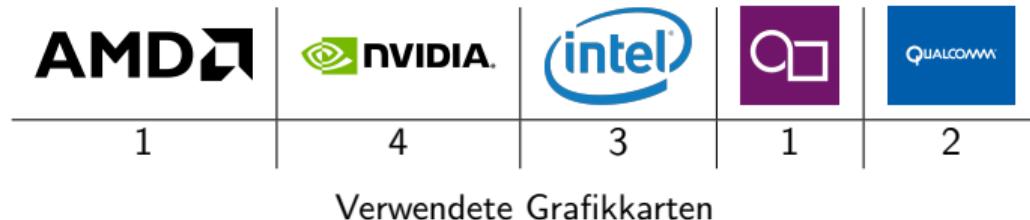
# Entwicklungsumgebung



Deployment auf 10 Geräten parallel



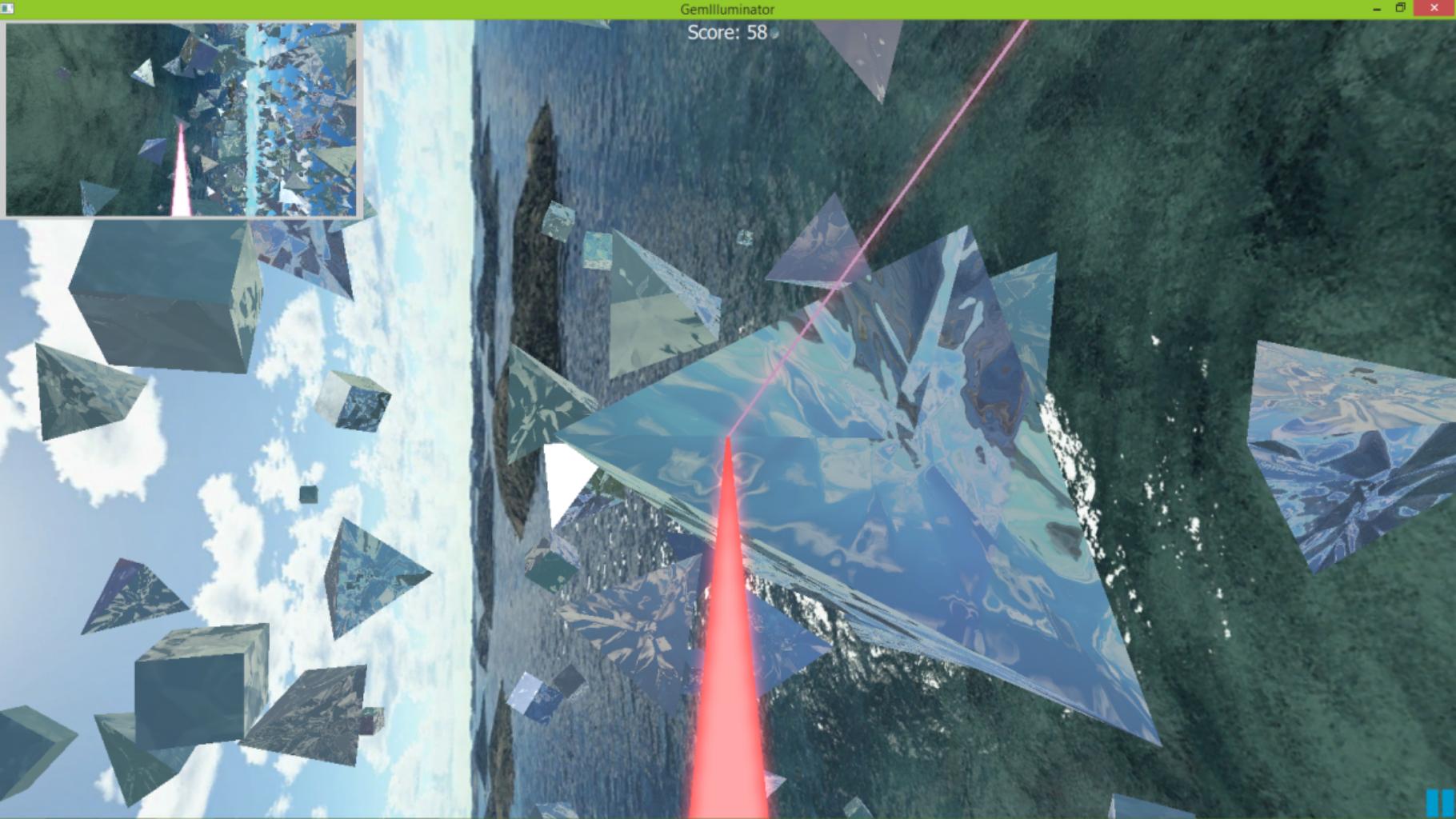
Entwicklung mit OpenGL ES 2.0



Verwendete Grafikkarten

GemIlluminator

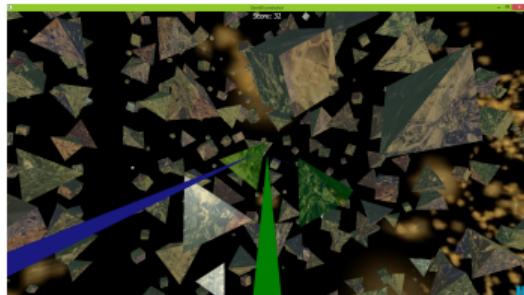
Score: 58



# Computergraphic Features



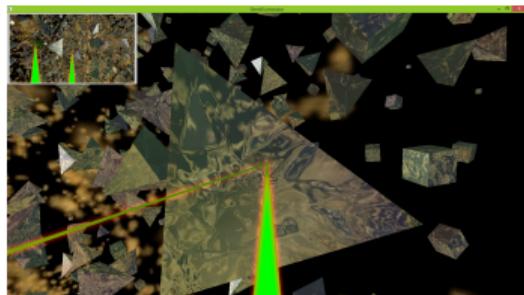
Environment Mapping



Licht- und Kristalleffekte

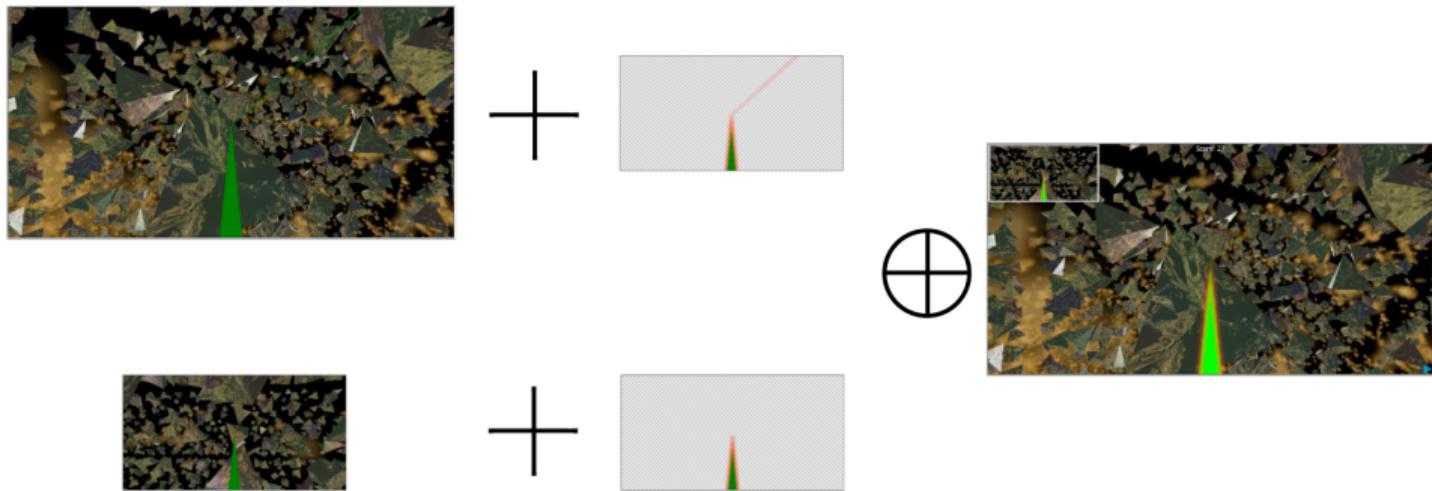


Preview-Window



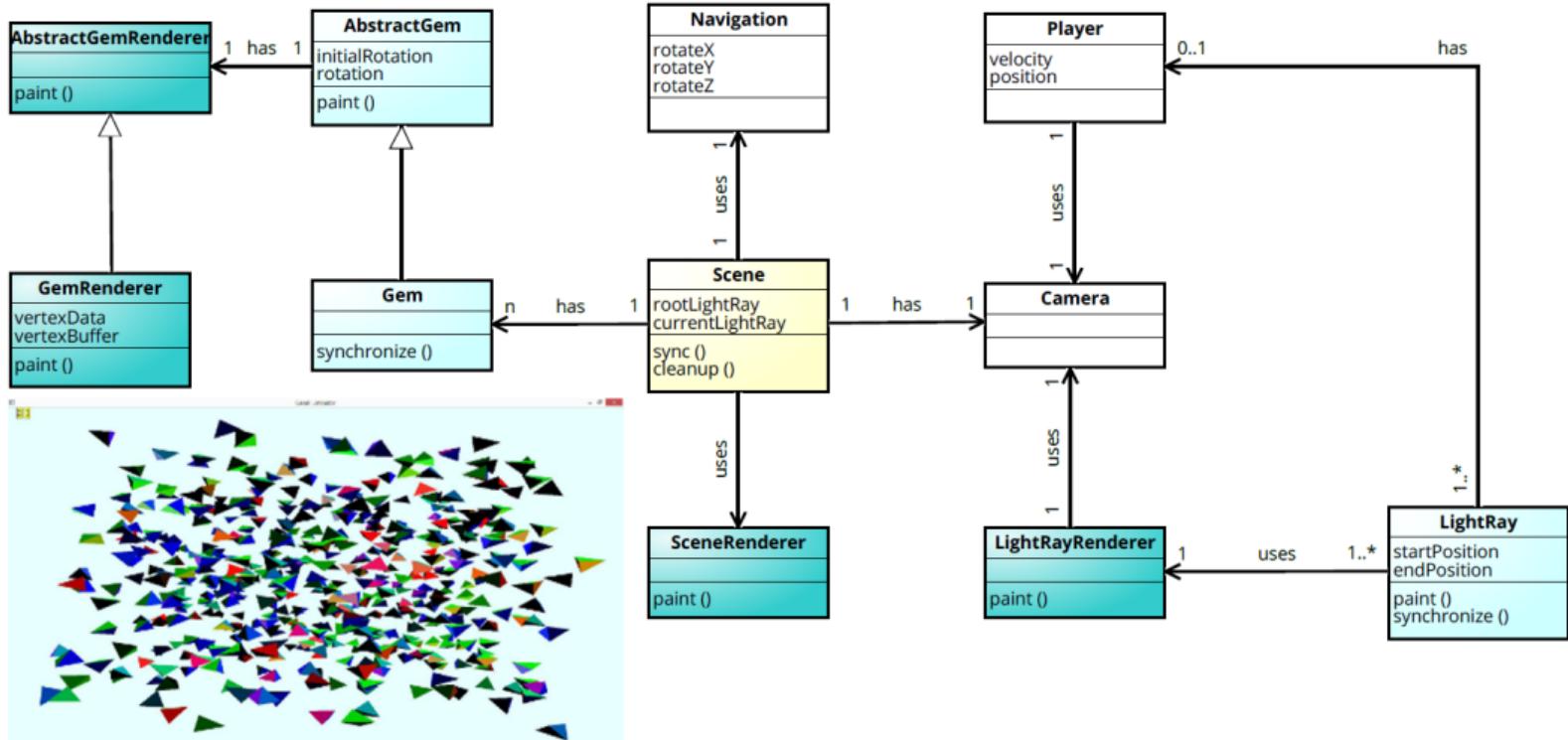
Glow-Effekt

# Preview Window & Glow

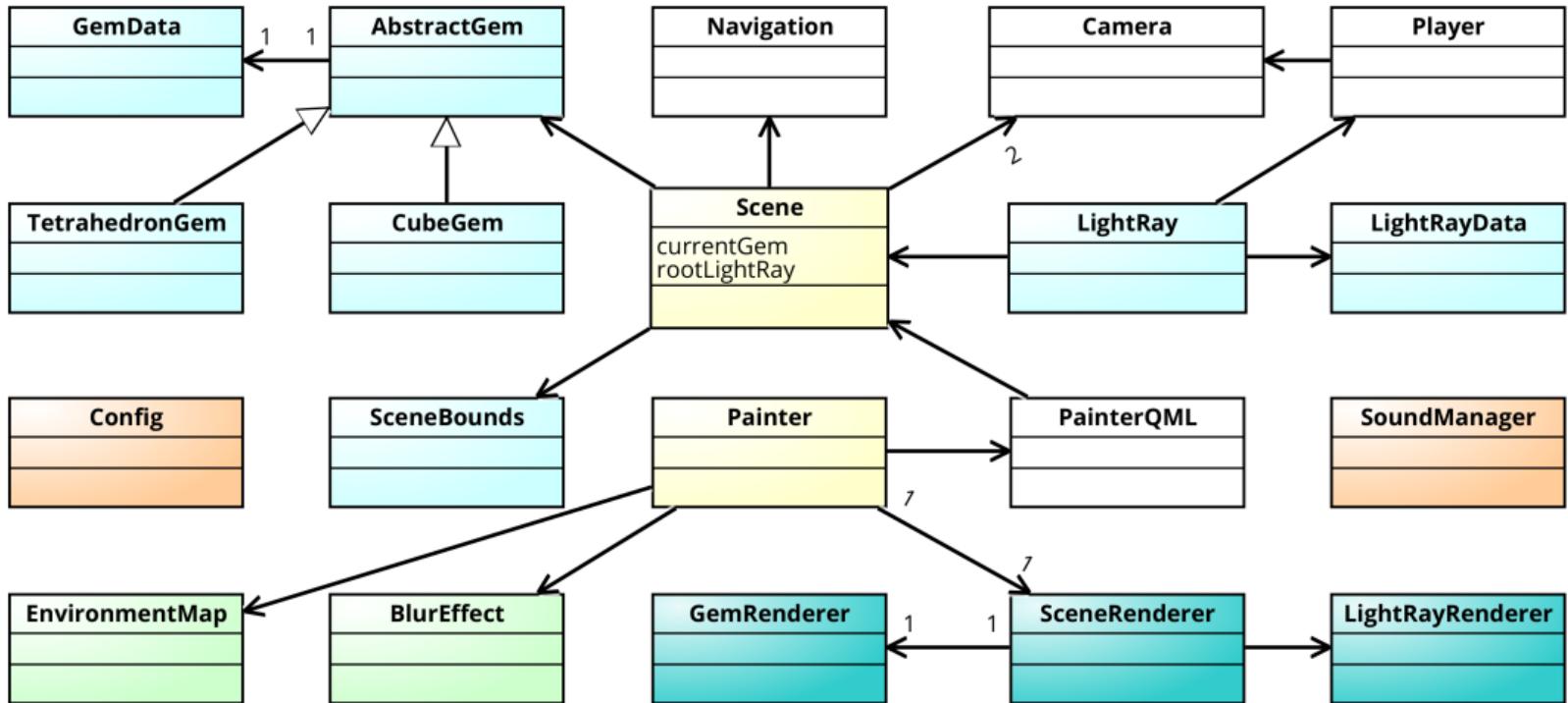


Glow-Effekt durch Blurring mit Gauss-Filter (Filterkerngröße  $5 \times 5$ )

# Architektur – Zwischenstandspräsentation



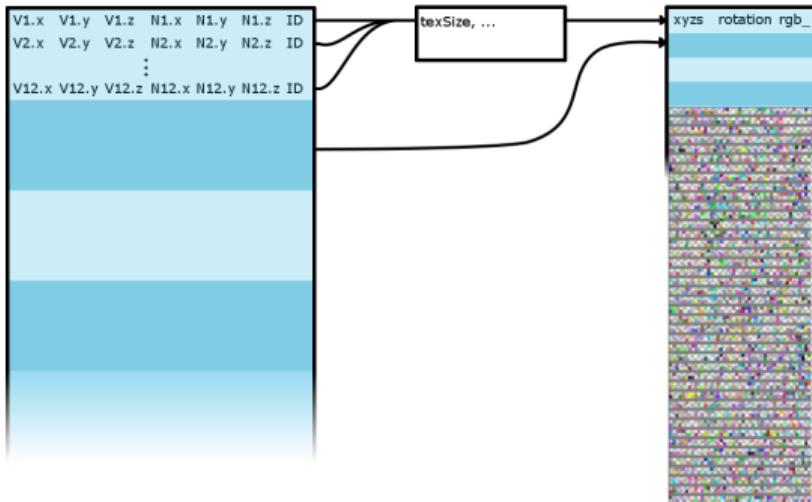
# Architektur – Abschlusspräsentation



# Optimiertes Rendering

1. Instance Drawing
2. Attribut-Buffer + Textur + gl\_VertexID
3. Attribut-Buffer + Textur + Index-Attribut
4. Attribut-Buffer + Byte-Textur + Index-Attribut
5. Attribut-Buffer + Byte-Textur + Float-Textur + Index-Attribut

# Optimiertes Rendering



# Fehler und Probleme

# Fehler und Probleme

```
W/Qt      ( 5930): (null):0 ((null)): QOpenGLShaderProgram::uniformLocation( u_data ): shader program is not linked
W/Qt      ( 5930): (null):0 ((null)): QOpenGLShaderProgram::uniformLocation( u_sceneExtent ): shader program is not linked
W/Qt      ( 5930): (null):0 ((null)): QOpenGLShaderProgram::uniformLocation( u_isFloatTextureAvailable ): shader program is not linked
W/Qt      ( 5930): (null):0 ((null)): QOpenGLShaderProgram::uniformLocation( u_texHeight ): shader program is not linked
W/Qt      ( 5930): (null):0 ((null)): QOpenGLShaderProgram::uniformLocation( u_texWidth ): shader program is not linked
W/Qt      ( 5930): (null):0 ((null)): QOpenGLShaderProgram::uniformLocation( u_maxGemSize ): shader program is not linked
W/Qt      ( 5930): (null):0 ((null)): QOpenGLShaderProgram::uniformLocation( u_minGemSize ): shader program is not linked
W/Qt      ( 5930): (null):0 ((null)): QOpenGLShader::link: "--From Vertex Shader:
W/Qt      ( 5930): --From Fragment Shader:
W/Qt      ( 5930): Link was successful.
W/Qt      ( 5930): "
```

## Vage Fehlermeldungen

```
void QTiltSensor::calibrate()
```

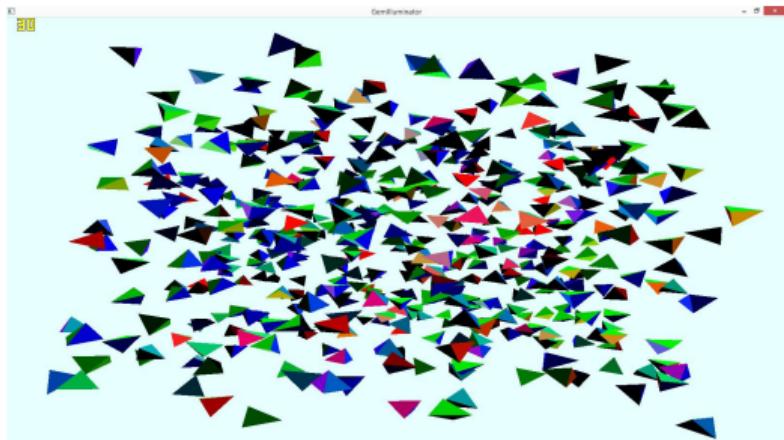
Calibrates the tilt sensor. Uses the current tilt angles as 0.

```
QMetaObject::invokeMethod: No such method QSensorBackend::calibrate()
```

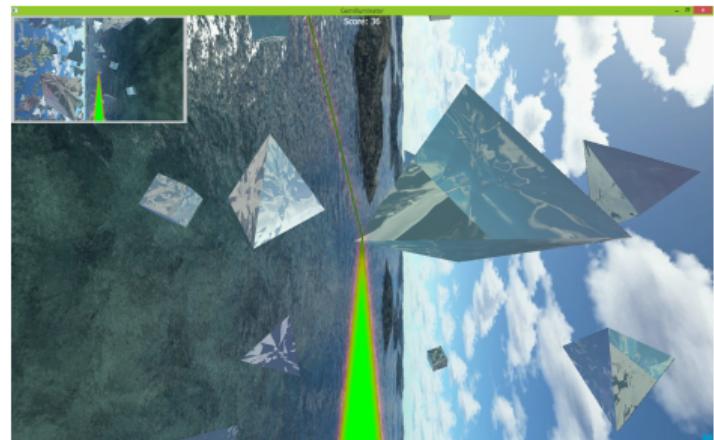
## Inakkurate Dokumentation

# Lessons learned - Teamerfahrung

- Abgleichen der Fähigkeiten, Erwartungen und Coding Styles
- Zufällig passendes Team
- Konstantes Arbeiten
- Nachmittagstief
- Durchdachtes Spielkonzept vs. coole Spielidee
- Spaß

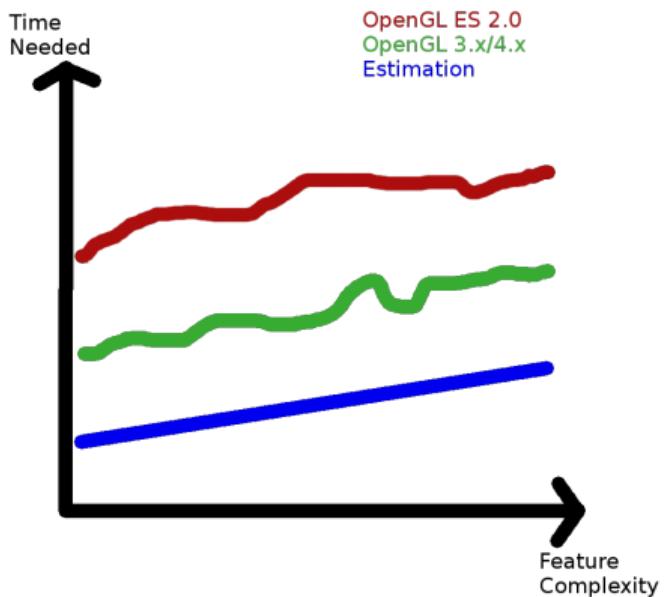


Zwischenstand



Finaler Stand

# Lessons learned - OpenGL ES 2.0 und QML



Es ist nicht unmöglich, aber es dauert.