

Numerical Methods for Computer Graphics in Java

Academic Year 2025 – 2026

Università degli Studi di Roma “Tor Vergata”

Presentation of the Course



- **Lecturer**
 - Hendrik Speleers
 - speleers@mat.uniroma2.it
- **When**
 - First semester
 - Monday 14:00 – 17:00
 - Wednesday 14:00 – 18:00
- **Where**
 - Aula 20 or PC Lab 25



Presentation of the Course

- **Topics**

- Part 1: Object-oriented programming in Java
 - Java syntax + object-oriented paradigm
 - Development and reasoning about algorithms/programs
- Part 2: Basic principles of computer graphics
 - Basic 2D graphical techniques in Java (2D drawing, image manipulation, ...)
 - General 3D graphical techniques (rendering pipeline, raytracing, ...)

- **Related courses in LM**

- CAN1: Modellizzazione Geometrica e Simulazione Numerica
- Metodi e Modelli in Computer Graphics

Presentation of the Course

- **Application fields of the course**

- Software industry
- Game industry
- Movie industry
- Computer aided manufacturing
- ...

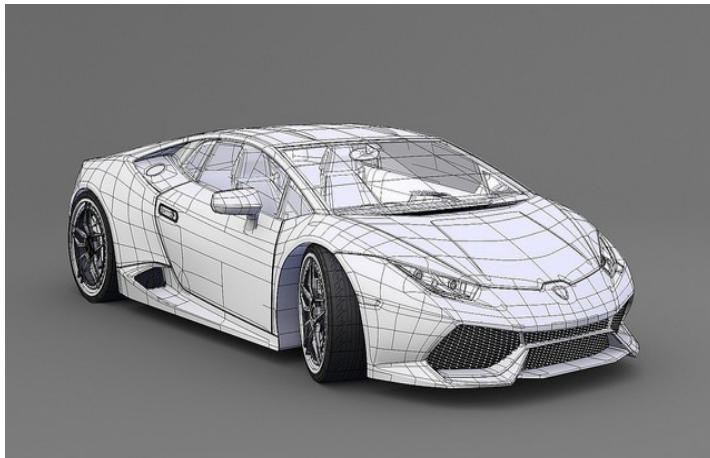
How to develop software?

+How to create 2D/3D models?

+How to visualize models?

Presentation of the Course

- Application fields of the course

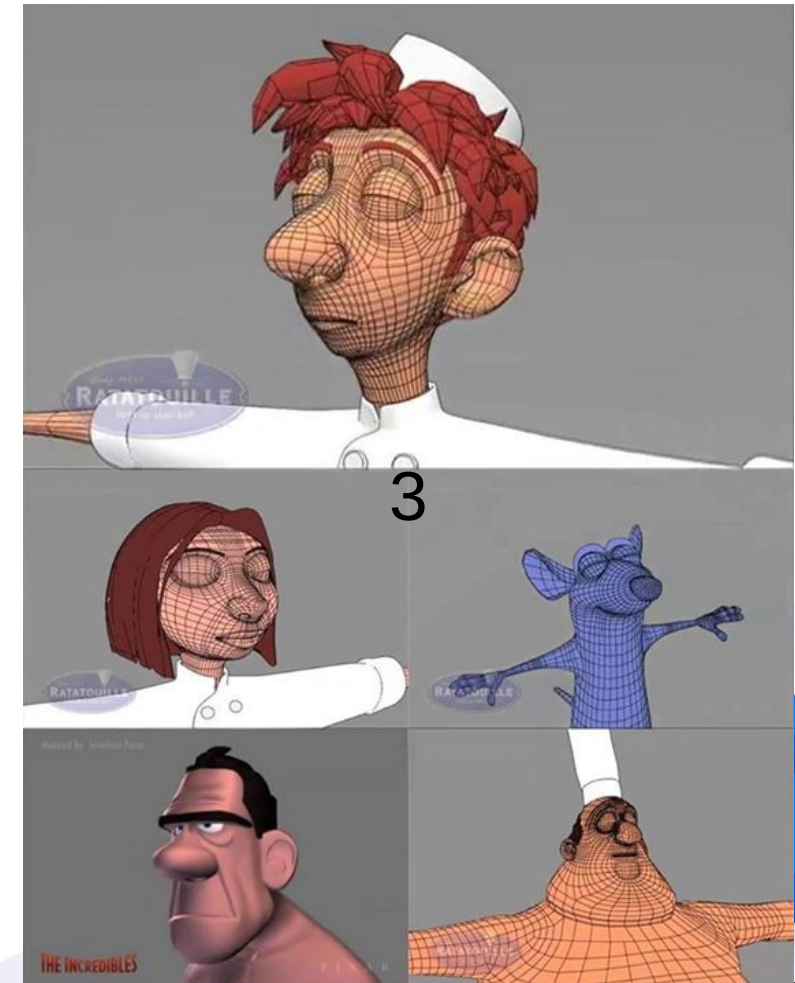


Lamborghini Huracán



Tomb Raider: Lara Croft Character Evolution

Ratatouille
characters
© Pixar



Presentation of the Course

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- Software industry
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- ...

How to develop software?

+How to create 2D/3D models?

+How to visualize 3D models?

- **Goal of course**

- Understanding of the basic underlying principles

Presentation of the Course

- **Application fields of the course**

- Software industry
- Game industry
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- Computer aided manufacturing
- ...

How to develop software?

+How to create 2D/3D models?

+How to visualize 3D models?

- **Examination**

- Project assignment
- Written/oral exam

Presentation of the Course



- Course material

[https://www.mat.uniroma2.it/
~speleers/teaching/nmcgj/nmcgj.html](https://www.mat.uniroma2.it/~speleers/teaching/nmcgj/nmcgj.html)

