



# Virtual Dentist

## Bachelor Student Project

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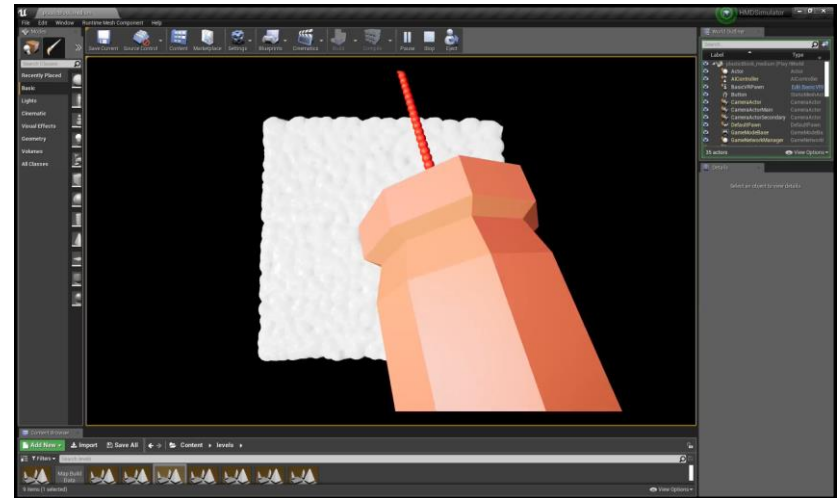
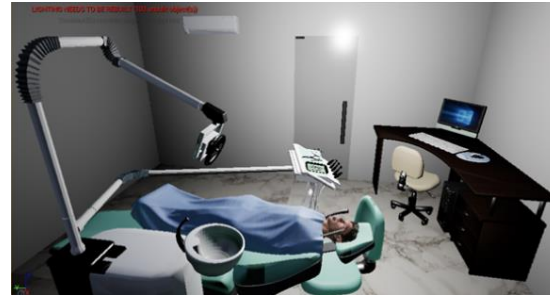
# Main Goal of the Project

- Create/improve virtual environment in Unreal Engine
- Design/improve haptic rendering algorithms
- Userstudy with dental students
  - (If circumstances permit)
  - To investigate usability and learning effectiveness

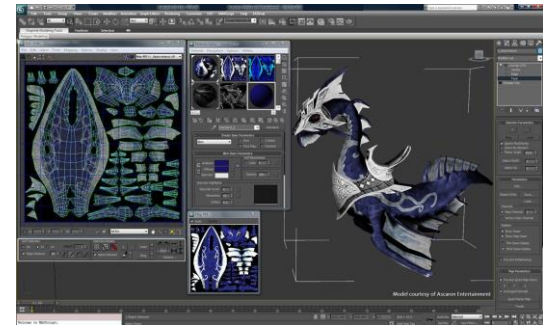


# Starting Point for Project

- Unreal engine dental surgery environment
  - Caries removal
  - Root canal opening
  - Root canal filing
- Plugins for haptic rendering



- For programmers:
  - Improve filing simulation
  - Generate new volumetric models of different teeth models
  - Recording user input & rolling the game back to earlier states
  - Implement/improve “Teleteaching” prototype
- For designers & modelers:
  - 3D modelling of realistic teeth or dental surgery interior objects, using tools like 3DSMax, Blender, Photoshop
  - Texturing (creating textures, uv mapping, ..)
- For both:
  - Userstudy design, execution & data analysis



# Project Infos

- One-semester
- Summer semester 2021
- Nice to have:
  - A bit of Virtual Reality / computer graphics / 3D knowledge
    - E.g., from “Computer Graphics”, “Virtual Reality”, "Advanced Computer Graphics" course
  - Programming skills in C++/CUDA or modelling skills
  - Commitment!
- The envisioned project team: mix of CS & DM students
- Great opportunities for bachelor/master theses subsequently



# Ready to dive into another world with us?



**Contact us:**

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