

COMP4422 Assignment 2

Me3D

Due: **30** November 2018 @ **11:59pm** Total Marks: 20



Objectives:

- Construct an accurate 3D model for your own head using Blender.
- Export the model together with the texture from your own photo into the me3d.obj file.
- Read in the me3d.obj file into a WebGL application called me3d.js.
- The html file should be called index.html and should contain only the vertex and the fragment shaders. The JavaScript source code should be contained in me3d.js.
- Render the 3D model using the GPU with at least two positional lights.
- Add a user interface in WebGL script me3d.js that will respond to two types of actions:
 - (a) rotate the lights only;
 - (b) rotate the head and the lights together.
- The mode of rotation should be decided by pressing (a) a-key, or (b) s-key. ESC-key should reset the scene to the original orientation. The rotations should be controlled by the arrow keys: left and right arrow keys: y-rotation; up and down arrow keys: x-rotation.

Basic Requirements: (20 points)

- The 3D model should be constructed according to your own face/head image.
- Your model should include your head and the upper part of the neck.
- Your 3D model should include the basic face features including mouth, nose, eyes, and ears.
- Render your model with proper lighting conditions.

Bonus for additional features: (up to 5 extra points)

- Map your 3D head model with realistic human skin texture.
- Your own texture from your self-image is recommended.
- Add hair for your model.
- Add accessories for your head model, like: glasses, ear rings, headband etc.
- Add additional UI features to WebGL, including picking and moving the head or the lights.

Submission:

- Your model should be compatible with Blender 2.76.
- Zip your project folder as **<studentID>.zip**.
- Your project should include:
 1. The 3D blender model
 2. Save your head model in a .blend file and a rendered image as a .jpg file.
 3. The blender and jpeg files should be named as:
 - <studentID>/me3d.blend**
 - <studentID>/me3d.jpg**
 - <studentID>/index.html**
 - <studentID>/me3d.js**
 4. Your own photos that you used for modeling. This is for evaluation purpose.
 - <studentID>/myphoto.jpg**

Evaluation:

- [8/20] General affinity. Your model should be very close to your own photos.
- [4/20] Basic face features include mouth, nose, eyes, and ears.
- [8/20] WebGL rendering and lighting and UI.