COMS W4172 (Spring 2024) IA PAGE

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A lot of the information on this page comes from previous IA pages created by Steve Henderson, Mengu Sukan, Nicolas Dedual, Carmine Elvezio, Morgan Thompson, Luis Tolosa, Xin (Amy) Xu, Noah Zweben, Sam Siu, Jen-Shuo Liu, Cory Robertson, Sara Samuel, Janane Sekaran, Lea Broudo, Portia Wang, Yen-Lin Chen, Bettina Schlager, and Elaine Lee

About

→ Main 4172 Website

→ Courseworks

Office Hours and IAs

Steve Feiner
feiner [AT] cs.columbia.edu

Office Hours:
- After class
- Make an appointment: Let me know what works for you

Ben Yang
by2297 [AT] columbia.edu

Office Hours:
- Thursdays 11:00 am–12:00 pm at CGUI Lab (Room 6LE3 CEPSR or by Zoom: https://columbiauniversity.zoom.us/j/6105905719?pwd=MHVrS1ZqMkkyTERxTk1WKytObTd1QT09)

Siddharth Ananth
sa4287 [AT] columbia.edu

Office Hours:
- Mondays 3:00pm–4:00pm in the CS TA room (Mudd 122 or by Zoom: https://columbiauniversity.zoom.us/j/6268162253

Useful Links and Resources

UI Design

Jakob Nielsen's 10 Usability Heuristics (and applications to VR)

Development

Unity

For more information and best practices about working with Unity, see our documents *Installing Unity and Deploying to iOS/Android* and *Developing with Unity*.

C#

Unity uses the Mono framework for scripting. All programming assignments in the course must be done in C#.

Unity scripting guide

- Unity scripting reference
- Unity scripting tutorial videos

.NET C#

C# and .NET differ slightly across different platforms (Windows and macOS).

- The official C# reference site
- A good set of C# tutorials

3D Math

Tutorials

- Unity has a short video on Vector math here
- A textual introduction can be found here
- A video by Unity: A Little Math for Your Big Ideas
- Steve Hazen's 3D programming articles (very enlightening with demonstrative videos)
    - What is a vector
    - Vector addition/subtraction

3D Modeling

3D Model Sources

- Unity Asset Store
- TurboSquid & CGTrader
    - Lots of great models, many free
- Sketchup 3D Warehouse (formerly Google Sketchup 3D Warehouse)
    - You can open these models in Sketchup then Export as 3DModel, Google Earth model (**.kmz**)
    - Change then extension on the google earth model (**.kmz**) to (**.zip**)
    - Open the archive and extract the model file (**.dae**) under models folder
    - Convert to **.fbx** using the FBX Converter.
- 3dmdb

3D Model Converters

- Autodesk FBX Converter
    - *“Transfer project data from one application to another quickly and easily with the FBX Converter. This utility lets you convert OBJ, DXF™, and 3DS files to and*

from the FBX format." - http://autodesk.com/fbx
    - *Note: When running the convert, ensure you choose a FBX format version compatible with your end application. The developers of Unity encourage usage of the latest versions of FBX.*
- 3D Object Converter

3D Modeling Software

Use these programs to create your own models!

- Autodesk Student Center
    - One of the industry leading 3D modeling software providers
    - Powerful package with large community of users
    - Free downloads for students
- Blender Open Source 3D Modeling tool
- Trimble Sketchup (previously Google Sketchup)
    - Free download (non-pro version)
    - Large community (tutorials, plugins, etc.)
    - Easy to get started

3D Model Viewers

- Autodesk FBX Review (for Windows and macOS)
- Lynx3D Viewer Lite
    - Use this to debug model scaling, origin, normals, etc

Texture Sources for Models

- Texturer
- CG Textures