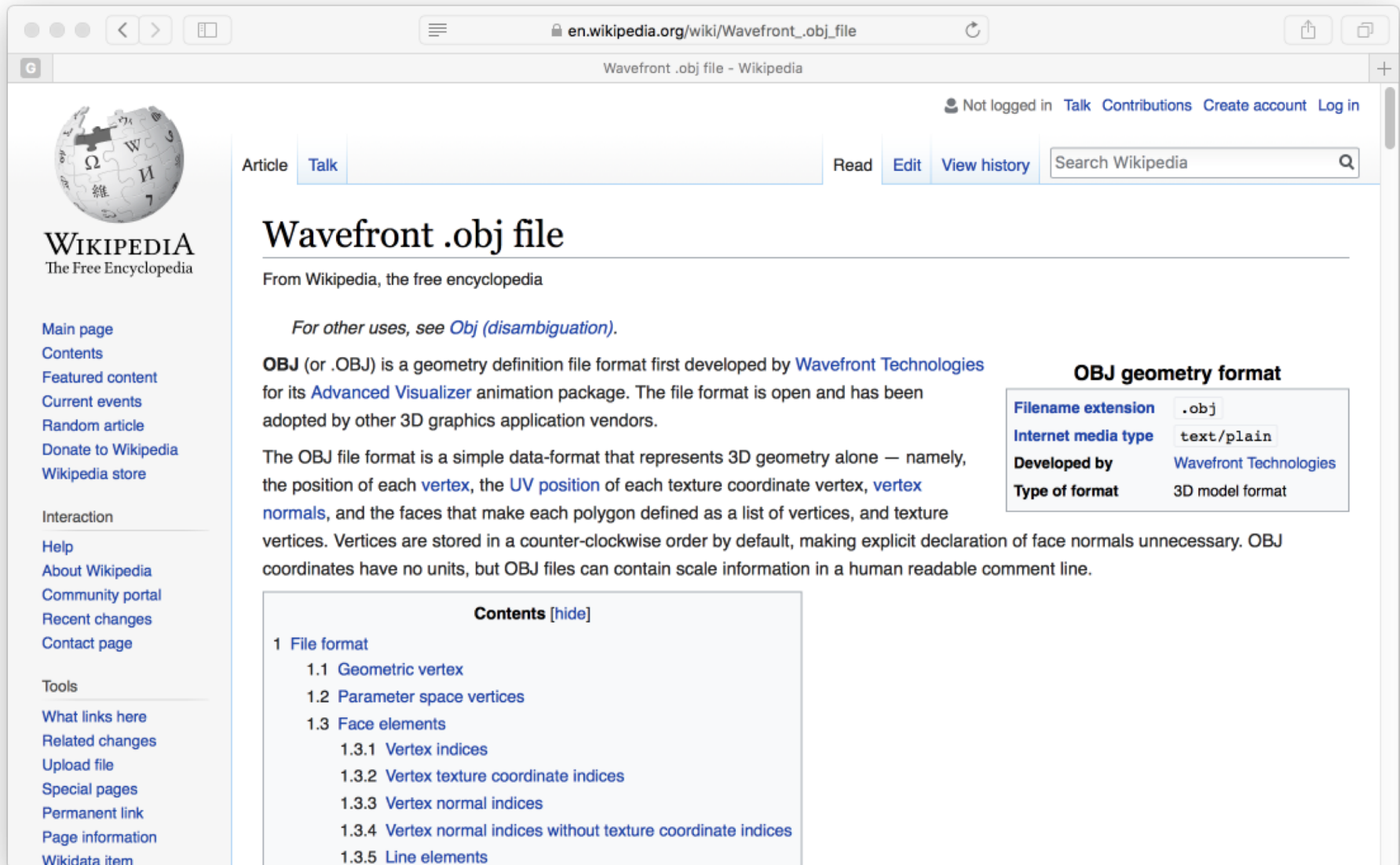


Lecture 6: 3D Modeling and Tools

September 12, 2019

OBJ Format - Review



The screenshot shows the Wikipedia article for "Wavefront .obj file". The page title is "Wavefront .obj file - Wikipedia". The article content includes a description of the OBJ format, its development by Wavefront Technologies, and its use in 3D graphics applications. A table on the right side of the article lists key metadata for the OBJ format.

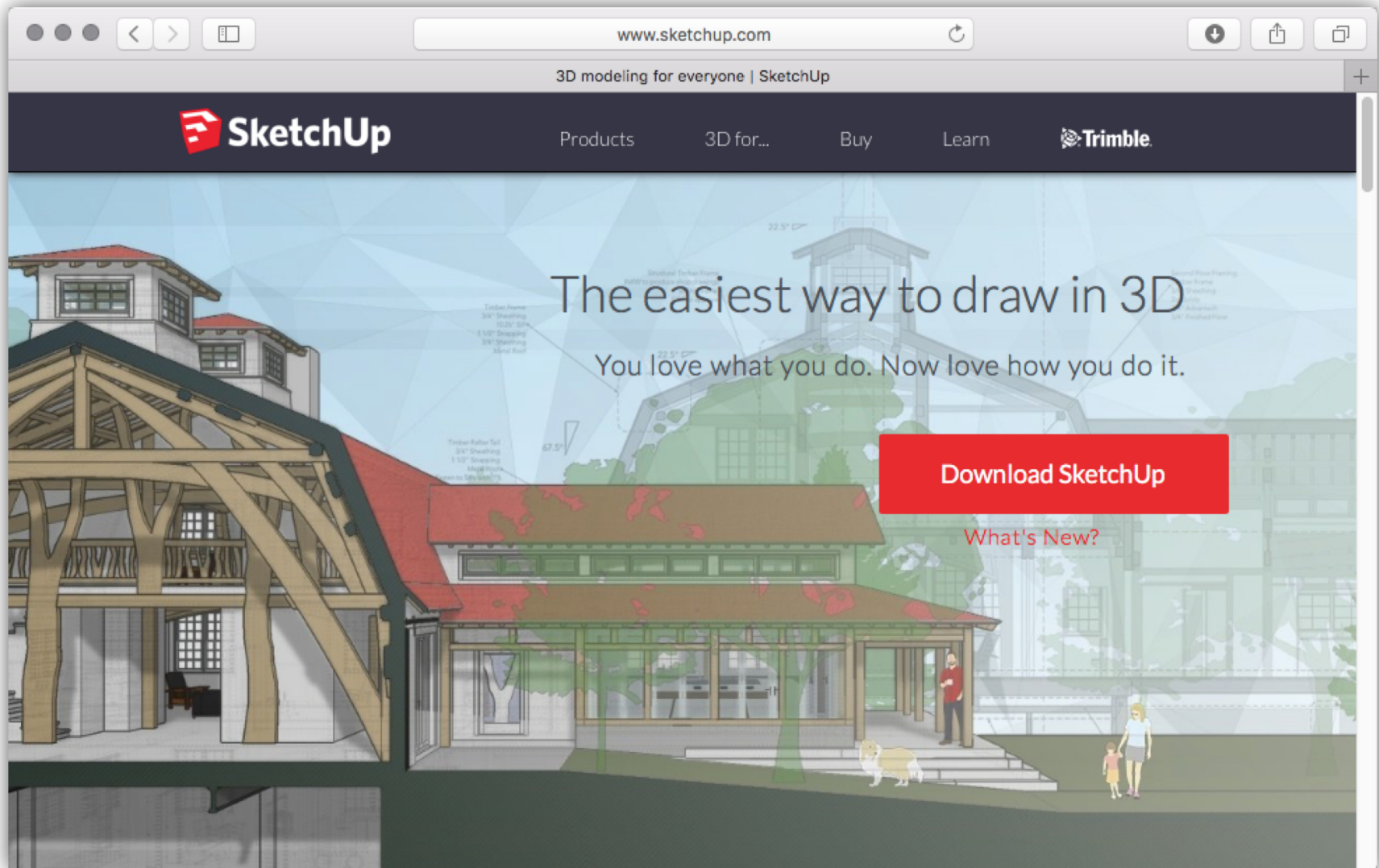
OBJ geometry format

Filename extension	.obj
Internet media type	text/plain
Developed by	Wavefront Technologies
Type of format	3D model format

Contents [hide]

- 1 File format
 - 1.1 Geometric vertex
 - 1.2 Parameter space vertices
 - 1.3 Face elements
 - 1.3.1 Vertex indices
 - 1.3.2 Vertex texture coordinate indices
 - 1.3.3 Vertex normal indices
 - 1.3.4 Vertex normal indices without texture coordinate indices
 - 1.3.5 Line elements

A Nod to CS410 History



New (to me!) - 2018

The image shows a screenshot of the Blender.org website. At the top, there is a navigation bar with the Blender logo on the left and links for Features, Download, Support, Get Involved, About, Donate, and Store on the right. The main content area features a large banner for the Blender Conference 2018 (BCON 2018) in Amsterdam, held from October 25 to 27. The banner includes the Blender logo, the text "Blender Conference 2018", and a "SOLD OUT. See you in October!" message. Below the banner, there is a white bar with the text "Open Source 3D creation. Free to use for any purpose, forever." and a blue button labeled "Download Blender 2.79b". The background of the banner is a night-time photograph of a city street with a canal and a large, ornate building.

Blender – First Glance



Interface makes PhotoShop looks simple 😞

Why Blender Now?

- You will want a way to view and compare 3D models store in wavefront OBJ format.
- Blender can do this easily
 - Like buying a jeep for the seat – but ...
 - .. Blender is now solid on Mac, Linux, Windows
 - Other options really are not, e.g. SketchUp
- Also ... as we move through the semester
 - Many concepts will now be ‘visible’ in Blender
 - Camera, Materials, Lights, etc.

Blender Intro Goals 1

- Basic 3D navigation
- Three button mice and hitting the ground
 - I don't mean hitting the ground running
 - I just mean hitting the ground (ouch)
 - It takes practice to simply manipulate the view
- Practice, having a good view is worth it!

Blender Intro Goals 2

- Load one – or two – OBJ files
- Move objects in ‘world’ coordinates
 - See results in OBJ file
- Edit faces and watch output in OBJ file
 - Start making sense of what is in these files.
- About triangles
 - What does it mean to represent a face

Blender Intro Goals 3

- A complementary view of camera modeling
- There is a camera (of course) in Blender
- It can be manipulated
 - So many ways to place the camera
 - Let us consider only one – match user view
- Camera used to render 2D views of a scene
- A consumers view of rendering

Blender and CS410 Expectations

- Expertise using Blender itself not a goal
 - Questions about using Blender not on exams
- Blender basics almost essential
 - You can view and build models many ways
 - But it is hard to imagine something better
- Key concepts illustrated with Blender
 - Both in lecture and then possibly on exams

Blender is new to CS410. My first impression of capabilities are positive.

And this matters ... Blender looks like a lot of FUN!