CPSC 314
Computer Graphics

Dinesh K. Pai

L12
Cameras and Projection 1

Today

- Announcements
  - Assignment 2 available, due Friday, Oct 13
  - Office hours:
    - Dinesh: W 4-5 in X853 (this week, later 005 by appointment)
    - Silver (TA): Thursday 4:30-5:30
      - This will be run like a tutorial
    - Reminder: you can also drop in on any Lab section
  - Homework: Read textbook Chapter 10
- Lecture
  - Assignment 1 spotlights
  - Cameras and Projection
  - Quiz 1 discussion
Cameras and Projection

Review the graphics pipeline

High Level (Chap 1)

Data → Vertex shader → Rayleigh → Fragment shader → Display

Functional View

Today: What is p?

Approximate a real camera or human eye

* Position and orientation of visual axis
  e.g. lookAt

* Projection from 3D to 2D
  use pinhole camera model

* Field of view (FOV)
  we'll ignore complexities like depth/field, film grain, distortion due to lens.
- these have perfect focus for all points but don't collect enough light.
- lenses collect more photos and focus them on the screen but can focus only points in a limited depth of field.
- we will approximate it with near and far planes defined by men.
- Field of View (FoV)
  Approximate with View FRUSTUM