Introduction
Introductions

• Instructor

  Parag Chaudhuri
  SIA-304, Kanwal Rekhi Building
  Office hours: Fix by email, Mention [CS475]/[CS675] in the subject line

• TA

  – Pratik Kalshetti, Ph.D., CSE
  – Safeer Afaque, Ph.D., CSE
  – Vaishali Shakya, M.Tech 2, CSE
Introductions

• **Course Details**
  - Slot 10, Tue, Fri, 2:00pm-3:30pm
  - www.cse.iitb.ac.in/~paragc/teaching/2018/cs475
  - Mailing list (CS475): cs475@cse.iitb.ac.in
  - Mailing list (CS675): cs675@cse.iitb.ac.in
  - Classroom: SIC-201

• **Eligibility**
  - Data Structures, Linear Algebra
  - **No** Audits
What is Computer Graphics?
Ernest and Celestine, Les Armateures, 2013
The Jungle Book, Disney, 2016
Scientific Visualization

Chanadrayaan, ISRO

Fiatlux Imaging
Digital and Print Media

Computational Photography


Desktop Publishing

Networked Media

Flash, Silverlight
IE, Firefox, Safari, Opera
YouTube, Flickr, Facebook
Graphical User Interfaces

Unity/Ubuntu

Aqua/Mac OSX 10.10

Metro/Windows 10

Apple iPhone

Wacom Cintiq

Fraunhofer FIT

Microsoft Surface Hub

Ivan Sutherland’s Sketchpad

Now

1962

The Future?

© Twentieth Century Fox
And the list goes on...

- Virtual Worlds – Google Earth, Second Life, Minecraft
- Algorithm Animation
- Typesetting and font design – LaTex, Freetype
- Digital Video and HDTV
- Drug Design
- Image and Video Search
- …
What is Computer Graphics?

- CG is the *art* and *science* of using the computer to make images.

- Study of methods (artistic, mathematical, algorithmic, software) and systems (mechanical, electronic, hardware) to create, control and manipulate pictorial data on the computer.
What is Computer Graphics?

- Forget the definitions!

- Remember why you are here.
What will we learn in the course?

Tentative course content
Drawing in 2D and 3D

Colouring Pixels
Modelling

- Lines, Polygons
- Curves, Surfaces
- Modelling transformations
- Hidden Surfaces
- Viewing transformations
Rendering

- Shading
- Lighting models
- Texture mapping
- Ray Tracing
Animation

• Transformations

• Interpolation
Course Structure

- Lectures, notes, textbook – see course webpage
- Make sure you are subscribed to the mailing lists.
- Programming Assignments – big ones.
- Announced Quizzes (Aug 29, Oct 17), Unannounced Quiz
- MidSem Exam (Sep 10 – 16)
- EndSem Exam (Nov 12 - 23)
Evaluation

• Everything is checked for plagiarism
  - Cite sources if you borrow (even if from your classmates/seniors).
  - Both parties get the same penalty.
  - At best, you will fail the course.
Grading

• Class Participation – 10%.
• Assignments, Demos, Vivas – 50-60%.
• Exams and Quizzes – 30-40%.

• Very low attendance – DX grade.
• If you plan to drop after the add/drop date – tell me.
Unsought Advice

- Attend classes – just the slides and book will not be sufficient.
- Do the assignments – plan early, don't ask for extensions.
- If you do not understand something – ASK! Ask early, ask often.
- If what I am teaching seems irrelevant – ask why it is being taught.
- If you think I am teaching something incorrect – point it out.
  - *If you do it often enough – correctly – you get a bonus!*
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Yay!

Let's begin!