

# **Histories of Computer Graphics:**

## *A Journey through Imagination*

Luiz Velho  
IMPA

*Happy Hour*

# Time 4 Fun

- 5a @ 5:00



*Trailer*

# Know Your Past ...

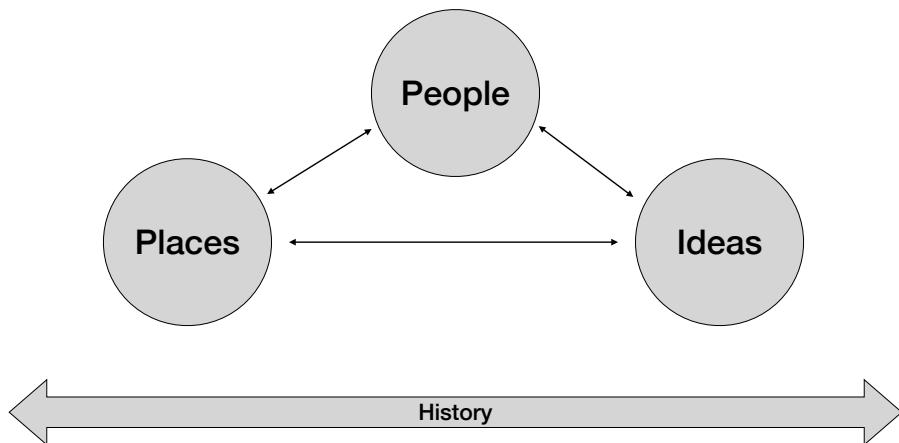
- “Ainda Estou Aqui”, 2024



*Our Feature Film*

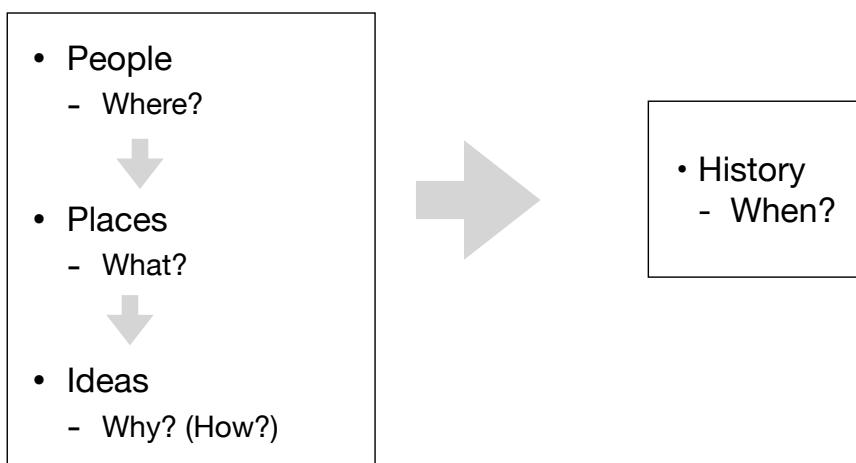
# Overview

- The Setting



# Solving the Puzzle

- How to Fit the Pieces Together?



# Seeing The Light

- What about (Key) Ideas?
- Basic Principle:
  - Keep it Simple!
- Occan's Razor
  - Not Too Simple
  - Not Complicated
  - Just Simple ...



## ACM SIGGRAPH

- Mothership

 ACM SIGGRAPH

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### ACM SIGGRAPH

Your global community for innovation and application

The ACM SIGGRAPH community is a global nonprofit organization serving the evolution of computer graphics and interactive techniques. With thousands of members across the world, the researchers, artists, developers, filmmakers, scientists, and business professionals of ACM SIGGRAPH are building the future of digital art and interactive design.

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# Steven Anson Coons Award

- The Fields Medal of Computer Graphics

*The Steven A. Coons award for outstanding creative contributions to computer graphics is presented in odd-numbered years to honor an individual who has made a lifetime contribution to computer graphics and interactive techniques. The award includes a \$6,000 cash prize and a specially commissioned statue.*

- Recipients

- |                            |                             |                         |                         |
|----------------------------|-----------------------------|-------------------------|-------------------------|
| • 1991 Andries van Dam     | • 2001 Lance J. Williams    | • 2011 James T. Kajiya  | • 2021 Markus Gross     |
| • 1989 David C. Evans      | • 1999 James F. Blinn       | • 2009 Robert L. Cook   | • 2019 Michael F. Cohen |
| • 1987 Donald P. Greenberg | • 1997 James Foley          | • 2007 Nelson Max       | • 2017 Jessica Hodgins  |
| • 1985 Pierre Bézier       | • 1995 José Luis Encarnaçāo | • 2005 Tomoyuki Nishita | • 2015 Henry Fuchs      |
| • 1983 Ivan E. Sutherland  | • 1993 Ed Catmull           | • 2003 Pat Hanrahan     | • 2013 Turner Whitted   |

## The Graphics (Re)volution

- Time & Place



# We, The People

- Ivan Sutherland
- Pierre Bezier
- Ed Catmull
- Jim Blinn
- Martin Newell
- John Warnock
- Henri Gouraud
- Bui Tui Phong
- Jim Clark
- Lance Williams
- Pat Hanharan
- Rob Cook
- Jim Kajiya
- Turner Whitted
- Alan Kay

# Homework

- Who are They?
- Wikipedia



- Today!  
=> for next class

# Course Matters

## Game Plan

- On Your Own
  - Start Making the Connections
  - Put Pieces Together
  - Explore the Web
  - Imagine!
- We Will do It Together
  - Every Week
  - Come Prepared
  - Contribute



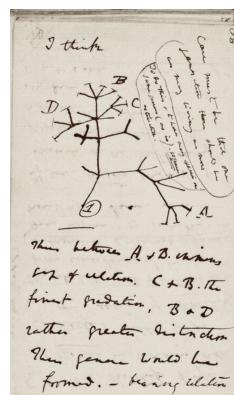
# Encounters of the 1st Kind

## *Training Program*

- Class Actions
  - Expository (30 - 45 min.)
    - Instructor
  - Brainstorming (30 - 45 min.)
    - Everybody
- To Do List
  - Required
    - Read the Docs!
  - Optional
    - Watch Videos
  - Extra
    - Surprize Me...

# Evaluation

- Keep a Diary of Your Journey
  - e.g., Charles Darwin's Beagle Diary
- Write a Summary Report
  - What you Learned
- Evaluate Yourself
  - Self-Grading



*Just to Get the Ball Rolling*

## Going Places

*First Part of Journey*

- Massachusetts Institute of Technology
  - Early Days
- University of Utah
  - Camelot Era
- New York Institute of Technology
  - The Works
- PIXAR
  - Showtime
- Globograph / IMPA
  - Then and Now

# The Magic of Graphics

*What is Computer Graphics?*

- The Basics
  - Modeling
  - Rendering
- and More ...
  - Animation
  - Interaction
  - Etc.

# Opening the Pandora's Box

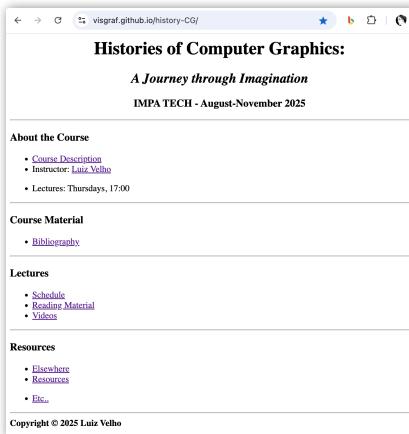
*Second Part of Journey*

- Scene Creation
  - Modeling
  - Animation
- Rendering
  - Clipping
  - Rasterization
  - Visibility
  - Shading
  - Illumination
  - Mapping

*The Devil is in the Details!*

# Headquarters

- Website on Github



<https://visgraf.github.io/history-CG/>

# Fireside Chat

- Let's Talk



# Watch @ Home

- Luiz Velho, 60 - Memórias e reflexões



*being @ the right place & right time*

- Celebrating Ivan Sutherland's 1968 Head-Mounted 3D Display



*having a vision & make it happen*



**“Looking forward to seeing you soon!”**

*—Luiz Velho*