THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY (GUANGZHOU)

Career Development for Information Hub Students

INFH 6780, Spring 2025

Instructor: Dr. Zeyu Wang

Outline

Last lecture introduced

- Career development paths
- Skills people wish they learned at school
- Importance of effective presentations

Today, I will cover

- **How to give a presentation**

How to Give a Presentation

- Know your **content**
  - If you are going to present something you do not know, it can easily go wrong
  - Be sure to know every technical detail in case someone in the audience asks
- Know your **context**
  - Who is going to be your audience?
  - Why would they spend time listening to you?
  - How to engage your audience?
  - What do you expect to gain from the talk?

An expert explains a complex subject in five levels of complexity

5 Levels

WIRED

26 videos 2,136,342 views Last updated on Dec 18,...

Play all

An expert explains a complex subject in five levels of complexity.

1 

Chess Pro Explains Chess in 5 Levels of Difficulty (ft. GothamChess) | WIRED

WIRED • 1.3M views • 3 months ago

2 

Harvard Professor Explains Algorithms in 5 Levels of Difficulty | WIRED

WIRED • 1.8M views • 4 months ago

3 

MIT Professor Explains Nuclear Fusion in 5 Levels of Difficulty | WIRED

WIRED • 407K views • 7 months ago

4 

Theoretical Physicist Brian Greene Explains Time in 5 Levels of Difficulty | WIRED

WIRED • 2.1M views • 10 months ago

5 

Mathematician Explains Infinity in 5 Levels of Difficulty | WIRED

WIRED • 3.9M views • 1 year ago

6 

Computer Scientist Explains the Internet in 5 Levels of Difficulty | WIRED

WIRED • 297K views • 1 year ago

7 

Computer Scientist Explains One Concept in 5 Levels of Difficulty | WIRED

WIRED • 467K views • 1 year ago

Explaining Fractals

- Prof. Keenan Crane (CMU)

Geometer Explains One Concept in 5 Levels of Difficulty | WIRED

284K views • 1 year ago

WIRED

Computer scientist Keenan Crane, PhD, is asked to **explain** fractals to **5** different people; a child, a teen, a college student, a grad ...

CC

Explaining Fractals to Child

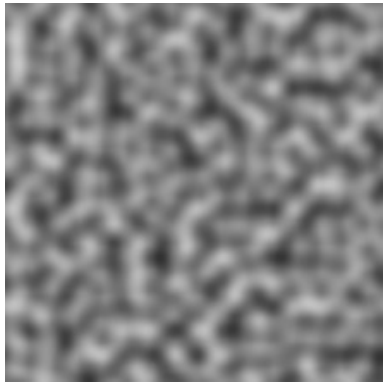
Explaining Fractals to Teen

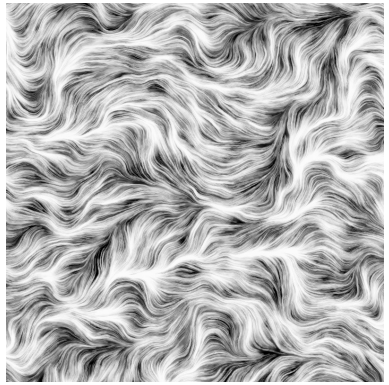
Explaining Fractals to College Student

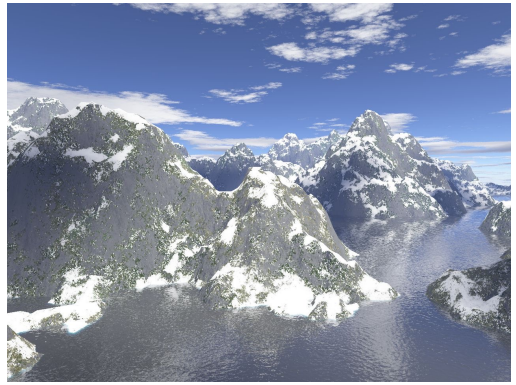
Explaining Fractals to Expert

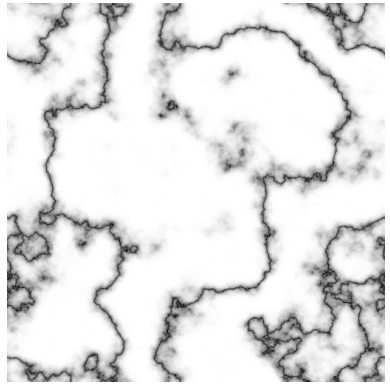
Perlin Noise
Academy Award (Oscar), 1996

Full Video ->









Takeaways

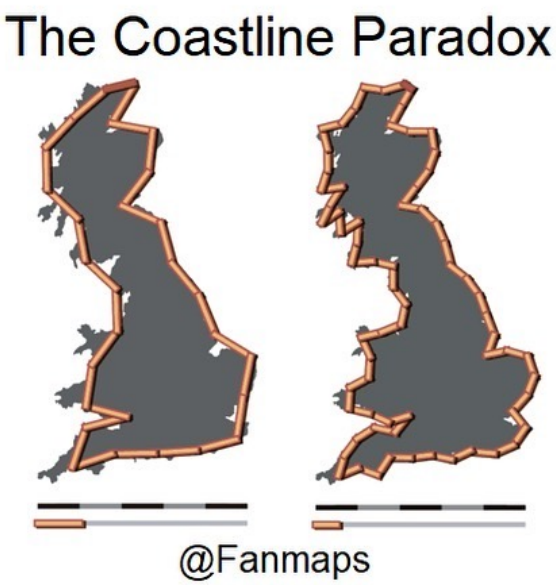
- Who is going to be your audience?
  - From the same, broadly related, or unrelated background
  - Start with concepts that most audience is familiar with
- For child
  - A shape with similar appearance if you look it far away or up close. Connect fractal to “fraction”
- For teen
  - Learning 7th grade geometry. Connect fractal to perimeter computation and the coastline paradox
- For undergrad
  - Video games, VR, textures, recursion, subdivision surfaces, rendering in computer graphics

Takeaways

- Why would they spend time listening to you?
  - Maybe they want to learn something new
  - Maybe they want to connect with you
  - Maybe they want to evaluate you as a candidate
  - Maybe you give fascinating presentations
  - …
- Do give the audience a reason to listen to you!

Takeaways

- How to engage your audience?
  - Use examples, ask questions, observe responses
  - Interaction and engagement are vital!
  - Otherwise, they can watch a video 2x speed



Takeaways

- What do you expect to gain from the talk?
  - You want to get your research ideas through
  - You want to be known with a good impression
  - You want to secure a job position or a budget
  - You want to improve your presentation skills
  - You want to get better teaching evaluation
  - …

How to Assemble A Talk

- Two Wrong Ways and a Right Way
- Prof. Theodore Kim (Yale)
- https://www.tkim.graphics/HOWTOTALK/index.html

Two Wrong Ways

- Attending a talk should not be the same as reading a book or a research paper

```
1 Open PowerPoint
2 while talk is not done do
3 |   Think real hard
4 |   Make a slide
5 end
```

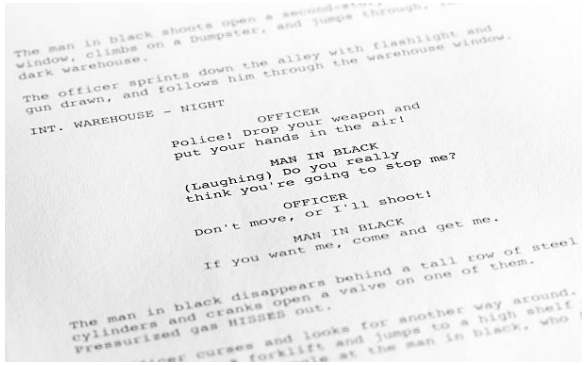
```
1 Open PowerPoint
2 for each section in the paper do
3 |   Convert section into bullet points
4 |   Put bullet points on a slide
5 end
6 Insert images and videos. Somewhere.
```

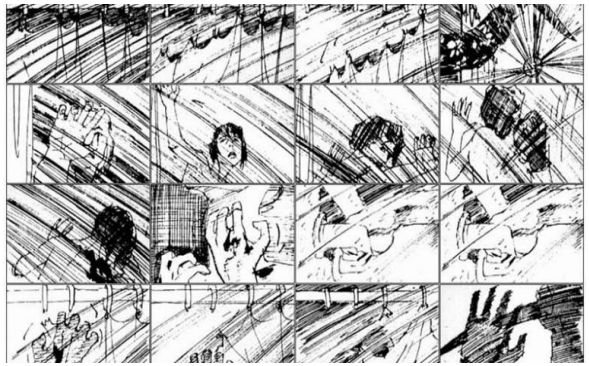
A Better Way

- Giving a talk is like performing a one-person play or film
- Don't build sets and shoot scenes before there is a script
- Don't assume the film should strictly adhere to the novel

A Better Way

1. Write a script
2. Build a storyboard
3. Build the sets
4. Rehearsals and audience screenings





1. Write a Script

- Write out everything that you want to say in the talk
- Decide exactly what information to present
- Decide the order of information, build a plot
- Decide characters, such as equations and technical concepts
- E.g., start by showing the terrible Algorithm A, and establish its terribleness by showing it failing in a variety of scenarios

2. Build a Storyboard

- Identify logical breaks where one idea ends and another begins, corresponding to transitions between slides
- Think about what visual information would help communicate the idea corresponding to each slide
- It's fine to use text to add extra emphasis
  - E.g., "GOTO CONSIDERED HARMFUL. REALLY."

3. Build the Sets

- Create slides after having the screenplay and storyboard
- Often need to rewrite certain script and rethink visuals
- Making visuals can take **a lot of time**
- Reuse figures from the paper or generate entirely new ones
- Focus locally on each slide as the global narrative was set
- Ensure the visual supports the concept in the strongest way

4. Rehearsals and Audience Screenings

- Do a run-through of the slides to get a sense of what works, what doesn't, and how long your talk runs
- Fix what didn't work. Be ruthless with your editing
- Do a run-through with a friend, collect comments, and repeat the process
- Make sure to **end on time**, not too short, nor too long

Nuts and Bolts

- 1 minute of presentation ≈ 1 hour of preparation
- 1 minute of presentation ≈ about 100 words
- Don’t over-rehearse to avoid repeating robotically
- Paste the script to the notes section in each slide
- Put a strong visual result on the first and last slide
  - E.g., a loop of your best result, a link to your source code release

Next Lecture

- A perfect example of a terrible presentation
- The DO's and DONT's of giving a presentation
- Preview: