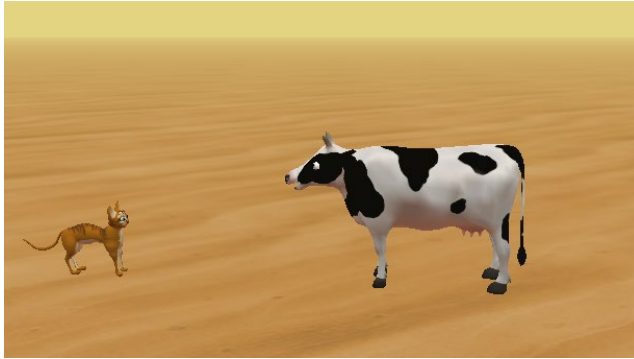# CompSci 94
Introduction to Programming
Animation and Virtual Worlds
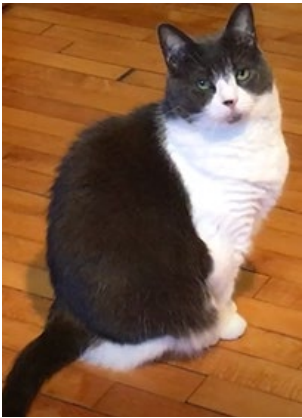# August 27, 2024
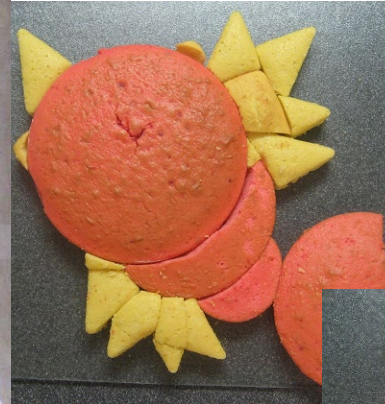

Prof. Susan Rodger

Class Today

- Go over syllabus, web page

- Introduce computer science and Alice

- Demos of Alice

  – Simple world/sample Alice worlds

- Classwork – Get to know each other

- Course website:

  www.cs.duke.edu/courses/fall24/compsci94

About Prof. Rodger

How do you keep your sanity?

TA/UTA introductions

- Graduate TA: Jiasheng Wang

- Undergraduate TAs:
  - Caroline Dolan Gilman

  - Linnea Kuruvilla

  - Abby Melton

  - Charley Nasiedlak

Course Web page
www.cs.duke.edu/courses/fall24/compsci94

What is Computer Science?

- Computer science is no more about computers than astronomy is about telescopes.   - Edsger Dijkstra

- Computer science is not as old as physics; it lags by a couple hundred years. However, this does not mean that there is significantly less on the computer scientist's plate than on the physicist's: younger it may be, but it has had a far more intense upbringing!   - Richard Feynman

Computer Science is a young discipline

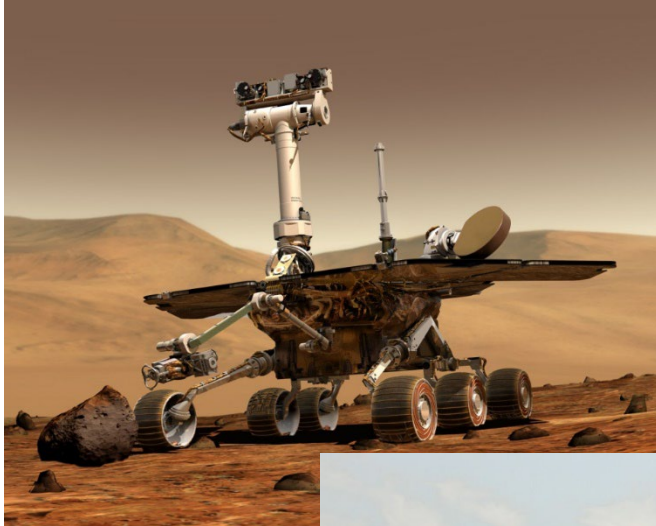- First computer science department formed in 1962

PURDUE
UNIVERSITY

1962

Samuel D. Conte
Professor emeritus of computer science and mathematics was the founding department head of the nation's first computer science program. October 1962.

What is Computer Science?

- Artificial Intelligence

Roomba

Spirit,
Mars Rover

Self-driving car

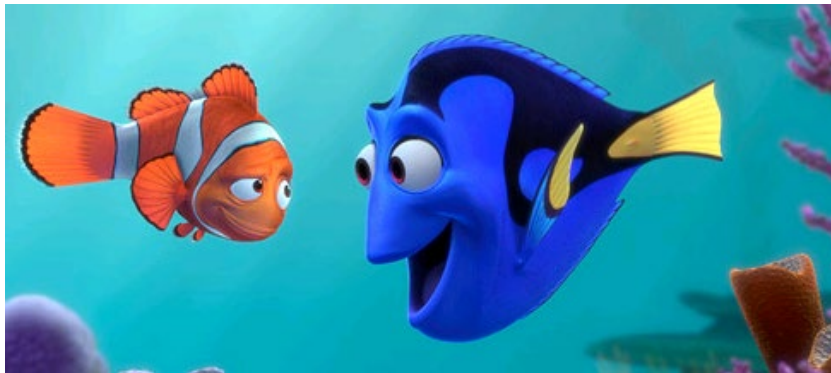Personal Robot

What is Computer Science?
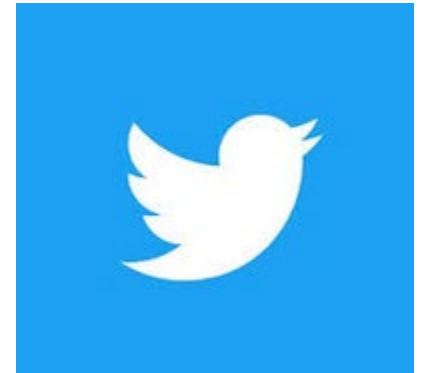
- Medicine, Genomics

Co

What is Computer Science?

- Animation

What is Computer Science?

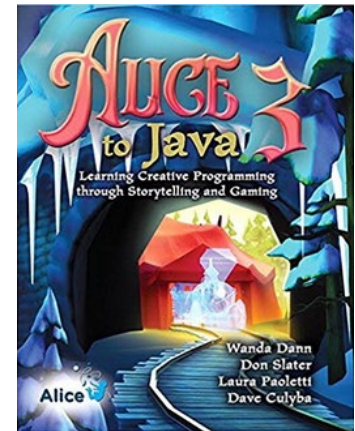- The Organization of Data, Sharing, and Searching

Computer Science and Programming

- Computer Science is more than programming
  - Called *Informatics* in many countries
  - Elements of both science and engineering
  - Elements of math, physics, cognitive science, music, art, and many other fields
- To some programming is an art, to others a science, to others an engineering discipline.

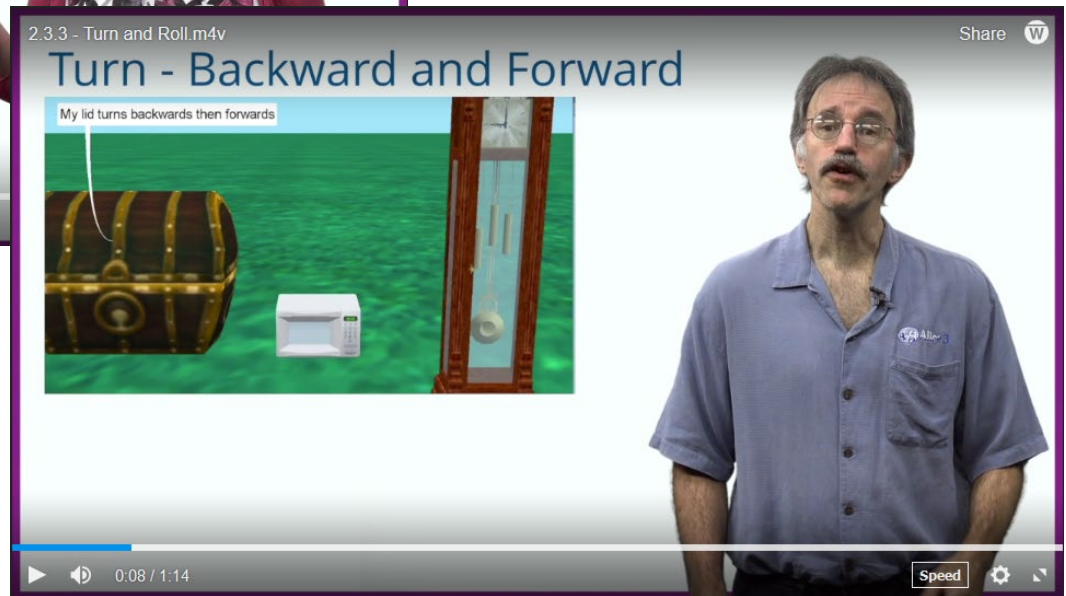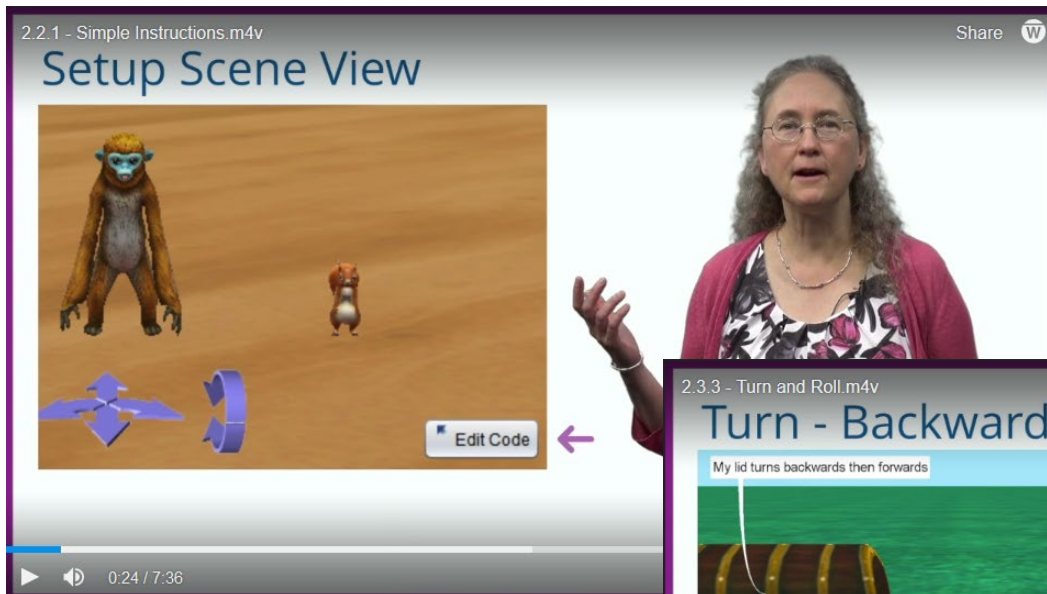# What Will We Do in CompSci 94?

- Alice 3 programming
- Logistics – bring to lecture
  - laptop/computer
  - **optional** Textbook
  - Instead: Free videos
- **THIS IS A CLASS WITH PARTICIPATION**
- You will write a program everyday!

Optional

Videos – Watch and take online quiz (on Sakai) before class
Prof. Susan Rodger/Prof. Steve Cooper

How CompSci 94 Will Work

- In Class
  - Lecture/demos/review – short
  - Full Lecture slides posted later
  - Classwork
  - REQUIRED ATTENDANCE
  - Checkoff Classwork
- Outside of class
  - Complete work not finished in class
  - Watch Videos – before class
  - Online Quizzes – before class
  - Assignments

You participate

Fill in missing parts

First one Thursday

Show us your program

Take before class!

How CompSci 94 Will Work

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Don't Send email, use Ed Discussion to ask questions!

What Is Alice?

- A modern programming tool
  - 3-D graphics
  - 3-D models of objects
- Animation
  - Objects can be made to move around virtual world (a simulation or video game)

What does Alice run on?

- Alice is written in Java – should run on many systems
  - supports Mac and PC
- Which version of Alice are we using?
  - Alice 3 (NOT netbeans version, NOT beta)
  - Alice.org, see the CompSci 94 resources page
    - Version 3.11
  - Note: Alice 3 is quite a bit different from Alice version 2
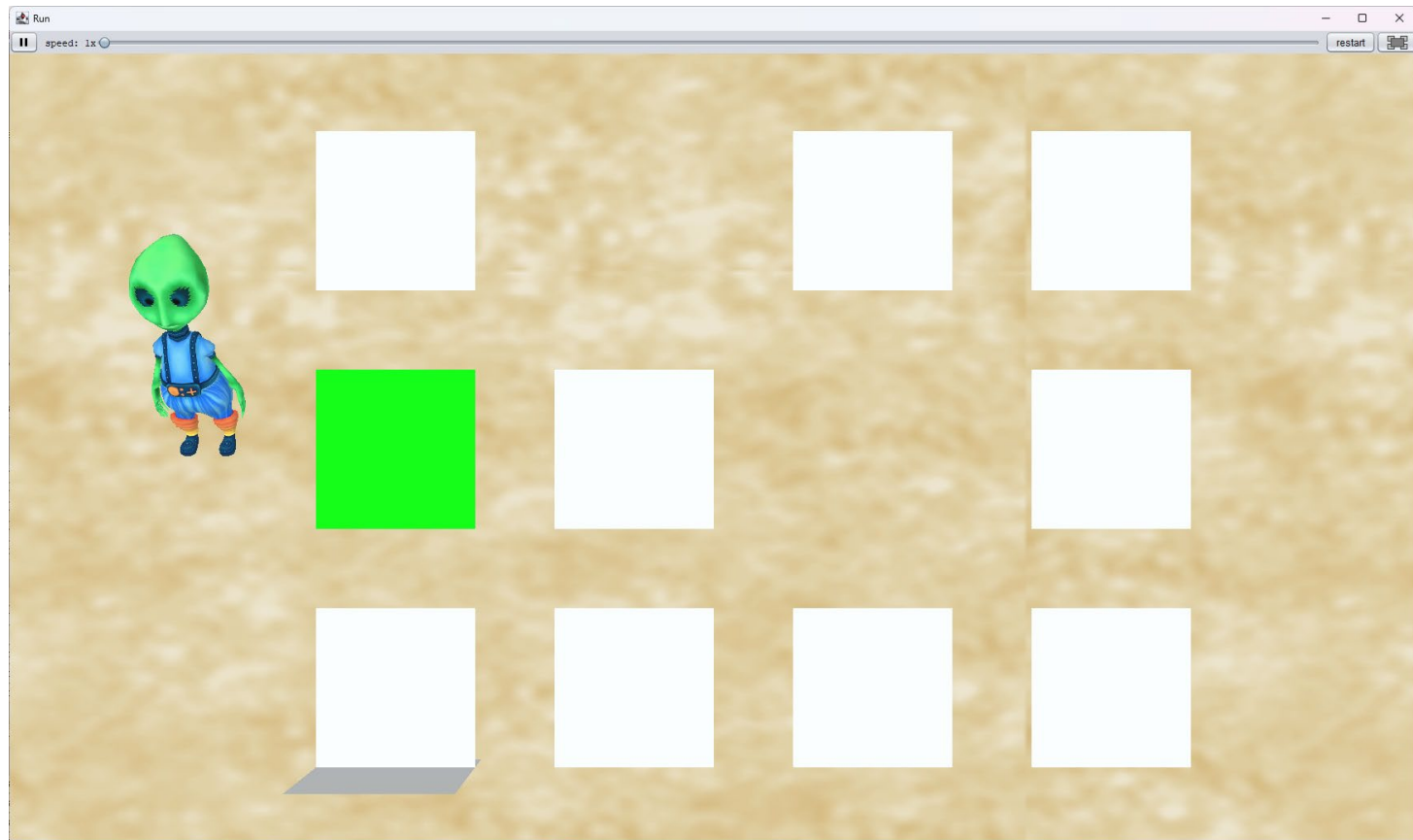
Example from Alice 2

Example from Alice 2

▶

Sample Project Alice 3

Another Sample Project Alice 3

Who are you?
https://bit.ly/cps94f24-01

The Power of Alice

- Automatically keeps track of 3-D objects
  - What objects are in the virtual world
  - Types of objects
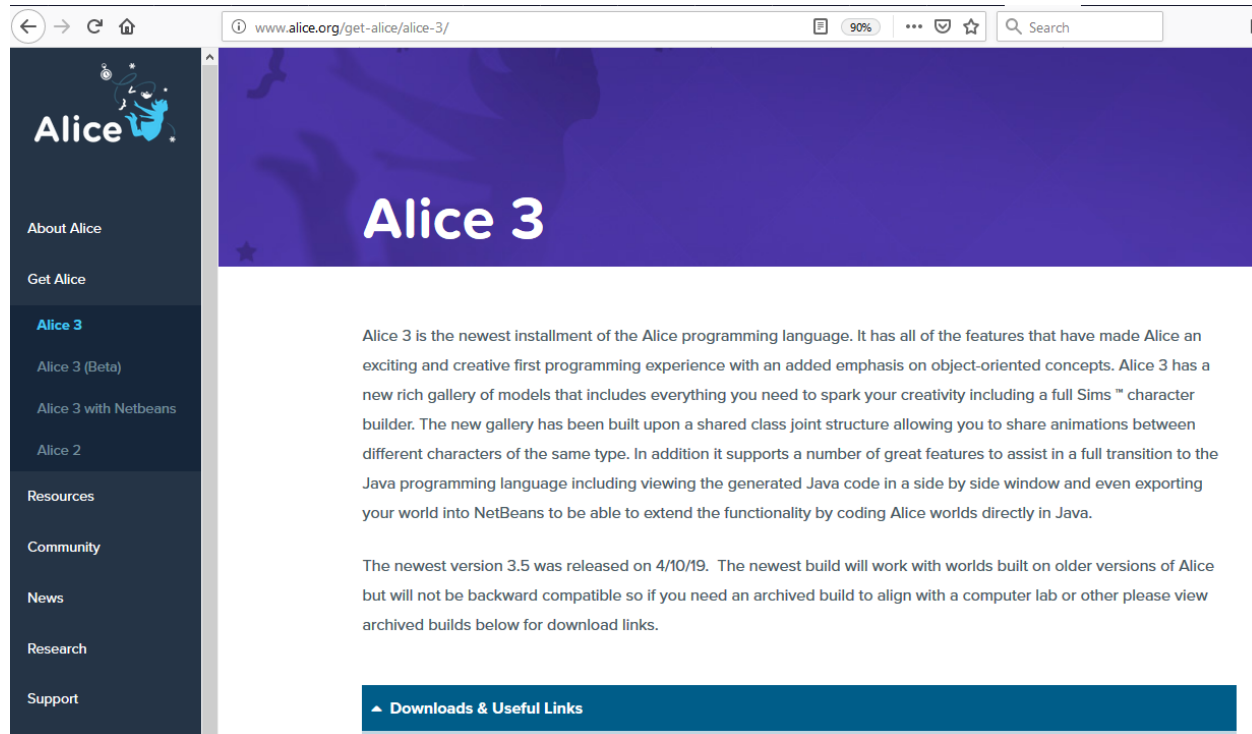 - Positions of objects in the world

Alice Demo

Code

do in order
- this.Cow **turnToFace** this.Cat   add detail
- this.Cat **turnToFace** this.Cow   add detail
- this.Cat **say** ♪"Watch what I can do"   add detail
- this.Cat **move** UP , 2.0   add detail
- this.Cat **move** FORWARD , 5.0   add detail
- this.Cat **move** DOWN , 2.0   add detail
- this.Cow **say** ♪"Whoa!!!"   add detail
- this.Cow **turn** LEFT , 0.5   add detail
- this.Cat **turn** RIGHT , 0.5   add detail

Download Alice 3 from alice.org, instructions CompSci 94 webpage, NOT Alice 2! NOT netbeans, NOT Beta!

For Thursday!

- No Alice classwork today but usually you would finish it

- We can check your Alice 3 install!!!

- Download Alice 3 if you haven't yet

- Assignment 1 out – Due Sept 5

  – This assignment does not use Alice

- Watch videos BEFORE coming to class.

- Take Quiz on Sakai BEFORE class starts