CSCI 141:
Computer Programming I

Lecture 1
Introduction

Today

- What is this course about?

- Why are we here?

- Who is this guy?

- How should you approach this course?

- Some course logistics

- Let's write some code already!

What is this course about?

- What is this course about?

- What will you learn?

What is this course about?

From the course catalog:

Basic concepts of computer programming using an object oriented programming language. Topics covered: introduction to the development environment, introduction to algorithms, elements of a programming language, including data types, packages, control structures, procedures and functions, basic input and output, arrays and records, text files, strings, variant records. Algorithm development, problem solving and software engineering are emphasized.

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What is this course about?

Computer Programming:

- data types

- control structures

- functions

- strings

- arrays

Can you define any of these terms?

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Computer Programming:

- data types
- control structures
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Can you define any of these terms?

These are the "nuts and bolts": the *syntax* and *semantics* of programming languages.

Dictionary

Search for a word   🔍

🔊 **se·man·tics**

/səˈman(t)iks/

noun

the branch of linguistics and logic concerned with meaning. There are a number of branches and subbranches of semantics, including *formal semantics*, which studies the logical aspects of meaning, such as sense, reference, implication, and logical form, *lexical semantics*, which studies word meanings and word relations, and *conceptual semantics*, which studies the cognitive structure of meaning.

- the meaning of a word, phrase, sentence, or text.
  plural noun: semantics

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What is this course about?

Problem Solving and Software Engineering:

- Break down and analyze problems

- Design algorithms that solve problems

- Describe algorithms in pseudocode

- Implement algorithms using clearly written, correct Python code.

- Fix errors and make changes to the code once it's written.

Computer Programming:
- data types
- control structures
- functions
- strings
- arrays

Why learn to program?

- Why do you want to learn how to program?

Why learn to program?

- Some ideas:

  - Get a job with cool perks and a high salary

Microkitchen at Facebook: Free snacks!

Why learn to program?

- Some ideas:

    - Get a job with cool perks and a high salary

    - Automate repetitive tasks

to OUTDOORED-L

Hi there,

Ice cream for the fist person who can get me what I want.

Count the number of times each person's name occurs with Column A=Person's Name, Column B=#

of Occurrences.

READY? GO!

Thanks,

Andrew

Cornell Outdoor Education
Climbing Program Coordinator

📄 Pass Visit Reports....

Why learn to program?

- Some ide____

  - Get a job _____ ry

  - Automate

  - Process o_____ your chosen
    profession

  - Creative fu

  - Understan_____mputers you
    use daily

  - Make friends with our future robot overlords
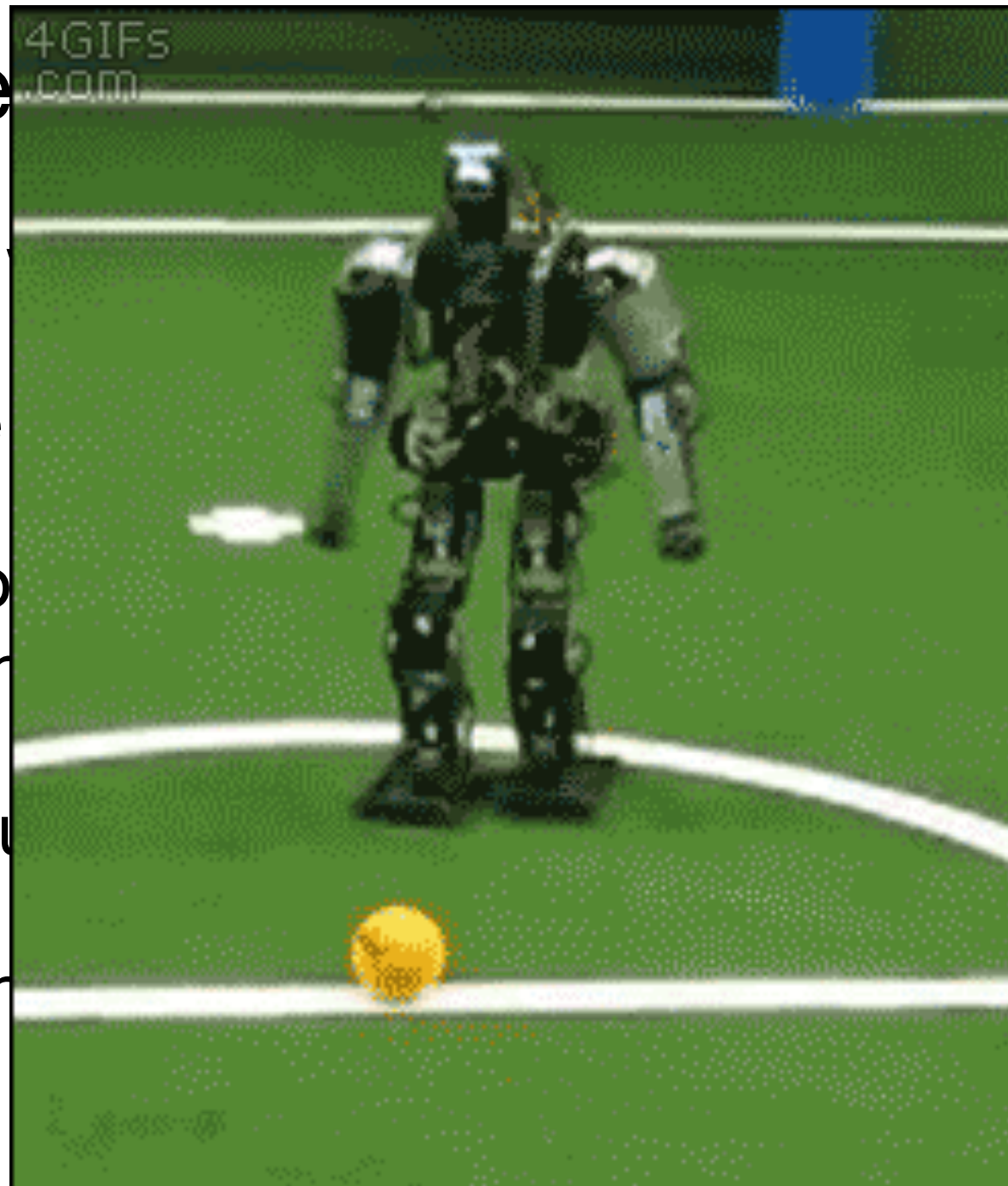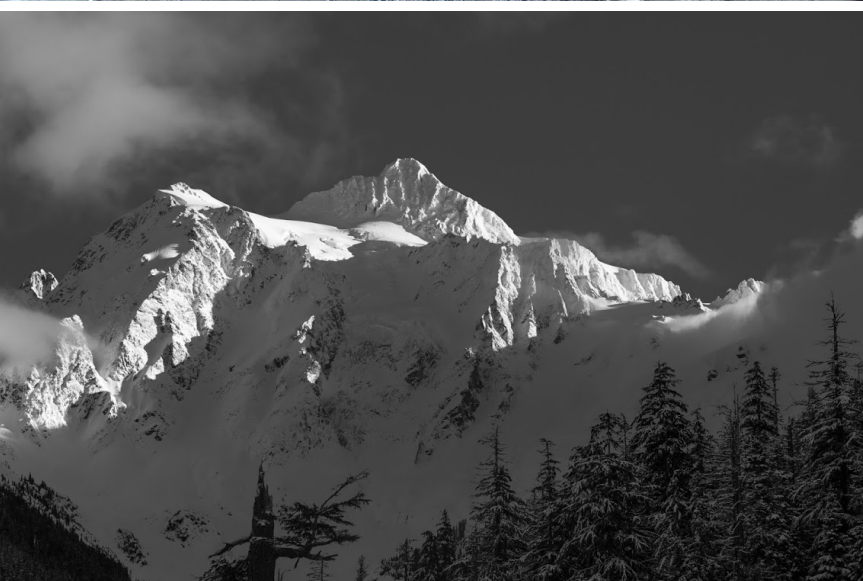
Who is this guy?

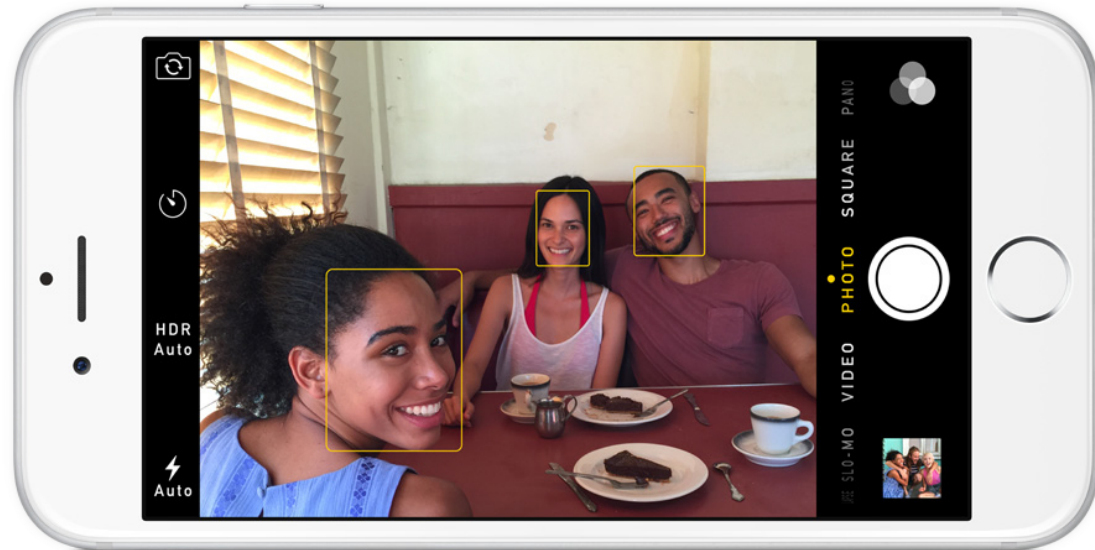# About Me

Scott Wehrwein

About Me

Scott Wehrwein

📍   🍷

Computer Vision: Familiar Examples

In-Camera Face Detection

Autonomous Driving

Panorama Stitching

Image Search

About You

Using the sheets I will pass out:

- Q1: How many months of programming experience do you have?

- Q2: Have you heard of a `for` loop?

- Q3: Are you considering majoring in CS?

- Q4: Name one activity you enjoy outside of school.

- On the back: Why do you want to take this class?

My Expectations

- Q1: How many months of programming experience do you have?

  - Zero!

- Q2: Have you heard of a `for` loop?

  - I've heard of froot loop, does that count?

- Q3, Q4, …: No expectations!

About You

By show of hands:

- Q1: How many months of programming experience do you have?

- **Q2: Have you heard of a `for` loop?**

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Inclusive Learning Environment

- There is diversity among us:

  - Age, Gender, Race/ethnicity

  - Prior programming experience

  - 1st-gen college students

  - Goals for what you want to get out of this class

- This is a good thing! Varied experiences, varied strengths, and varied perspectives lead to better solutions to problems!

- Notice that not all of these characteristics are immediately apparent.

Inclusive Learning Environment

- My goal: A learning environment in which everyone feels comfortable, curious, and excited to learn.

- **Anyone know how to ride a bike?**

Inclusive Learning Environment

- My goal: A learning environment in which everyone feels comfortable, curious, and excited to learn.

- My ideal outcome from this course:

Inclusive Learning Environment

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- My ideal outcome from this course:

Remember what it was like to learn?

Inclusive Learning Environment

- My goal: A learning environment in which everyone feels comfortable, curious, and excited to learn.

- My ideal outcome from this course:

What are the steps to making this happen?

Inclusive Learning Environment

- Recipe for success:

Inclusive Learning Environment

- What does this

have to do with an inclusive learning environment or computer science?

Inclusive Learning Environment

- My goal: A learning environment in which everyone feels comfortable, curious, and excited to learn.

  - You learn by **doing**.

  - This involves **making mistakes** and **asking questions**.

  - **Nobody** writes perfect code on the first try, not even professionals.

- Keep this in mind when:

This is you.

Inclusive Learning Environment

- My goal: A learning environment in which everyone feels comfortable, curious, and excited to learn.

    - You learn by **doing.**

    - This involves **making mistakes** and **asking questions.**

    - **Nobody** writes perfect code on the first try, not even professionals.

- **Also** keep this in mind when:

This is you.

Inclusive Learning Environment

- A key computer science skill: empathy.

  - Empathize with the stupid computer

  - Empathize with other programmers reading your code

  - Empathize with your peers and understand that they learn in their own way, at their own pace.

- Try to keep this in mind in the classroom, in labs, in the hallways, and in general.

One more thing about me

- This is my first time teaching CSCI 141!

Me

- I welcome constructive feedback that helps me do a better job.

Logistics

The syllabus is on the course webpage:

https://facultyweb.cs.wwu.edu/~wehrwes/courses/csci141_19s/

This link can also be found on the Syllabus page on Canvas.

CSCI 141 - Computer Programming I

Scott Wehrwein

Spring 2019

- Course Overview
- Assessment
- Logistics
- Schedule
- Course Policies

Syllabus Highlights

- In-class assessments

- Labs

- Schedule

- Slip days

- Academic honesty

Getting Stuck and Getting Un-Stuck

- At some point when programming, you will probably get stuck.

- Ideal case: you puzzle through the problem, refer to your notes, the slides, or the textbook, and you independently arrive at that "ah-ha!" moment.

- Common case: half hour later you're no less confused; maybe you don't even know what question to ask. **This is when you should get help.**

Getting Stuck and Getting Un-Stuck

- Ways to get help when you're stuck:

  - My office hours and TA office hours (see the webpage)

  - CS mentor hours: 4:00pm-7:00pm in CF 162/164.

- This only works if you have time between now and the deadline.

- Don't underestimate the programming assignments: start early.

Takeaways: Introduction

- This course covers the basics of programming, and is the beginning of a journey towards a new way of thinking and solving problems.

- Programming and problem-solving are useful skills, whether you plan to go into computer science or not.

- Making mistakes is an important part of learning. Learn from your own mistakes, and don't judge other people for theirs. Be empathetic.

- Class participation is an important component of this course.

- Don't stay stuck on assignments for too long: get help early and often.