COMP 410: Course Introduction

Kyle Dewey

About Me

- My research
  - Automated program testing + CS education
  - Programming language design
- My dissertation used logic programming extensively
- I've taught this class a bunch

About this Class

- See something wrong? Want something improved? Email me about it! (kyle.dewey@csun.edu)
- I generally operate based on feedback

Bad Feedback

- This guy sucks.
- This class is boring.
- This material is useless.

-I can’t do anything in response to this

Good Feedback

- This guy sucks, *I can't read his writing.*
- This class is boring, *it's way too slow.*
- This material is useless, *I don't see how it relates to anything in reality.*

- I can't fix anything if I don't know what's wrong

-I can actually do something about this!

What is Logic Programming?

-Major programming paradigm - a way of thinking about problems
-Emphases thinking about exactly _what_ the problem is, as opposed to exactly _how_ to solve it. This is called declarative programming.
-For example: it's generally easier to say what constraints must hold for a valid Sudoku solution, as opposed to directly finding a valid Sudoku solution.
-Somewhat related to functional programming - we generally lack mutable state
-Unlike any other major paradigm, the distinction between inputs and outputs is intentionally blurred. You can take advantage of this.
-Basis in formal logic. It's the only major paradigm where "=" has the same meaning as it does in math.

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-Strong emphasis on programming and using logic programming languages
-I want you to think in this paradigm, not merely force Java into it
-The ideas can be applied in non-logical languages, and your first assignment will force you to write in a logical way outside of a logic programming language (though you won't realize that's what you're doing yet)
-Little bit of theory

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- Applying logic programming without a logic programming language

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- Artificial intelligence

-"Artificial intelligence" used to refer to search techniques, which is relevant to logic programming. Now the term largely refers to machine learning. What it means is a moving target.
-Machine learning (we won't do any sort of statistics)
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Syllabus