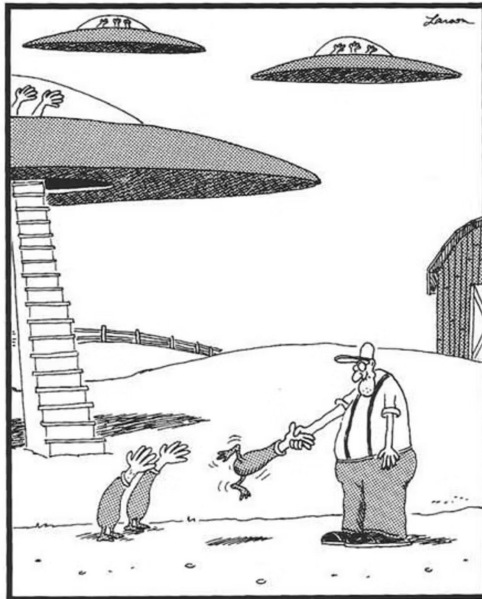**CSCI 3202**
Lecture 13
September 24, 2025

Inadvertently, Roy dooms the entire earth to annihilation when, in an attempt to be friendly, he seizes their leader by the head and shakes vigorously.

The Far Side by Gary Larson. https://www.thefarside.com/

Announcements
- HW #1 has been released
  - Please contact the grader or TA first with questions
  - I will assist if needed
- Quiz #3, Quiz #4 released
- Quiz #5 on Friday
  - Bayes Nets
  - Enumeration
- HW #4 due on Monday, 9/29
- Midterm in **two weeks**

Quiz 4
- Average 82%
- P(A|B)=P(A,B)/P(B) by definition

	A Not	A
B Not	0.1	0.6
B	0.1	0.2

- Calculate P(A)=$\sum_{i \in B} P(A|B_i)$
- P(A)=P(A|B Not) + P(A | B)= 0.6 + 0.2 = 0.8
- P(B)=P(B|A Not) + P(B | A)= 0.1 + 0.2 = 0.3
- P(B|A)= P(B,A) / P(A)= P(A,B)/P(A)= 0.2 / 0.8= 0.25
- A and B are independent $\iff$ P(A,B)=P(A)*P(B)
    - P(A)P(B)=0.8 * 0.3= 0.24 $\neq$ 0.2
    - $\therefore$ A is not independent of B
- Review

Monday Class
- How was Monday's class?
- Did it help to see it first on video?

Bayesian Networks
- Bayesian networks are an extension of the Bayesian Classifier ideas
- The networks allow us to solve complex problems such as the relationship between exercise and heart disease in ways we could not solve them before
- Bayes Nets Part II.pdf

Readings
- AIMA Section 13.2-13.3

Upcoming
- More Bayes Networks
- Finish Bayes Networks then Local Optimization
- Midterm in