Meeting 0: Paradoxes

Philosophy of Computation at Berkeley

pocab.org

04/07/17

Scheduled

1. Introductions
2. Machine Vision vs. Human Vision, John Denero
3. Motivations for Philosophy of Computation at Berkeley (POCAB)

Introductions

1. Nihar Dalal
    a. Took a Logic class, recognized parts of computer science that are often ignored
    b. Wants to focus on the "beauty of computer science," because it's often "too techy, quick, and flashy"
    c. Emphasized the nature of CS culture
2. Alex Tran
    a. Studies Computer Science and Philosophy at Berkeley
    b. Interested in religion, morality, logical arguments, philosophy of science
    c. Discussed Analytic[1] and Continental[2] method.
    d. Philosophy at Berkeley is mostly analytic.

Machine Vision vs. Human Vision, John Denero

Tidbits:

- Denero admits that "philosophy is hard" and that there's usually "no progress through experimentation." However, he admits that he never regrets thinking about the intersection of computer science and philosophy – it's "real juicy stuff."
    - Philosophy of Computation may "shape the motivation of computer science."
- The structure of analytical philosophy consists of generally broad questions: *What does it mean to be? Or to know?*
- Proposition of Being: all there is to being is physical stuff. (Physicalism)
- We ask *is Physicalism true*? Note: it excludes consciousness.
    - Arguments against Physicalism: the Knowledge argument (also known as Mary's room)
        - Denero explains, it's about what it is to know, rather than what it is to be.
        - Physicalists must hold that physical knowledge is complete.
        - Qualia: instances of subjective conscious experience. (Thomas Nagle's What is it like to be a Bat?)

Machine Vision vs. Human Vision:

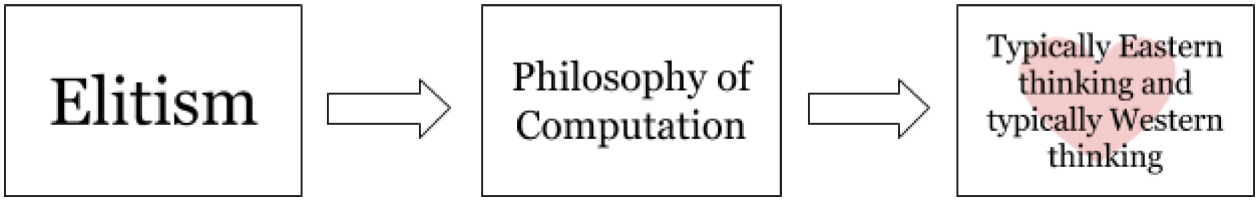
- Computer Vision: image to image translation, "mapping between input and output," lots of "linear transformations and matrices."
- Machine Translation

- Transforming a photo to painting and painting to photo.
  - "We still get surprised when we perceive an output of a solution that we understand." (Everyone gasped "Woah!" instead of "ho hum.")
  - Can humans do the same task by repeated attempts and guessing and checking?
  - Can humans do the task of an AI and if they were to, would it mean they understand the algorithm better than other humans?

Motivations for POCAB:

1. Climate of UC Berkeley's Computer Science department
   a. There's a general consciousness that there is a problem within the CS community. (Piazza: EECS 101)
      i. We hope to have a community of people that are more actively talking about problems, not just on the internet (i.e Piazza, Facebook)
      ii. General sense of elitism, one-up-man-ship
2. Solution to problems

Figure 1



   a. Philosophy of Computation may provide the framework for solving problems (Figure 1)
      i. Q: "I'm skeptical when we say 'solution.' Are we solving morality with computation? These are age old questions that no one has figured out for centuries."
         1. A: "What I want is discussion on the topic of solving morality. You could oppose or agree with what I think."
         2. We strive to generate discourse. (real juicy stuff!)
      ii. Q: "If we're going to start solving or discussing philosophy, what's our framework of axioms? All computation and proofs start with mathematical axioms."
         1. A: "We may create our own and shift our axioms as we go. But we may discuss the Church-Turing thesis"
         2. A: "I don't think we should create axioms, at least not prematurely. If we do, then we're already setting boundaries for ourselves. That's the end of an open mind."
         3. A: "That's a good point. Then we shouldn't establish axioms now."
      iii. Q: "Are we going to use specifically continental or analytic method?"

            1. A: “That’s our choice as a individuals and as a club. How do you want to go about it?”
3. Personal Agendas
    a. “We don’t want to impose our views on you.”
    b. “We all have our different takes on philosophy of computation and we don’t always agree. The purpose of POCAB is that we can talk about our differences and learn together.”
    c. For some of us, we might have a personal reason and then we go backwards. For Jerome, “I grew up in Korea and in the United States. So, I started from ‘typically Eastern thinking and typically Western thinking,’ (Culture and Contradiction) to philosophy of computation, and then to the climate of CS culture at Berkeley.”

Discussion Notes: Paradoxes

1. Computation and Information
    a. Is this document claiming that a bit is the smallest unit of information? We learned about this in CS 189.
    b. Q: Who is this written by?
        i. A: *It’s The Information: A History, a Theory, a Flood* by James Gleick
    c. “I think Gleick is making a dangerous claim by calling us “information gatherers.” It says we have used iron in the Iron Age so now we need to use information to the make the world around us. It presents itself as a metaphysical social reality but it’s a dangerous political statement.”
        i. “Can you clarify what you mean?”
            1. “It’s a claim that we need to be information gatherers. But he presents it as a fact.”
            2. “I think it is a fact.I don’t see the political aspect. We may not interact with the world in the informational matter, but our interaction is informational. Like, we need information to interact in the first place.
        ii. “We exist at an informational level. I think by saying it’s political, we’re breaking an *abstraction barrier* in our interpretation of what Gleick means.”
            1. “Qualia in its definition is subjective. So how we gather information is all unique.”
            2. “Can you define qualia?”
            3. “It’s subjective experience. Like what’s it like to be a bat? Or describing a color to a blind person.”
    d. Memes
        i. “Are memes a form of reproducing information?”
            1. “Like how you see a meme and information goes to your brain?”
            2. “Have you heard of the Toxo-Plasma of Rage?”
                a. “It’s a virus, or maybe a bacteria, that exists in cats and spreads through its fecal matter. Then mice interact with

the fecal matter, and it makes mice attracted to cats. Then the mice get eaten."
        b. "That's so meta."
        c. "I think memes are like the Toxo-Plasma of Rage"
        d. "In essence, the purpose the bacteria or it's function is to keep existing. What it does is it hijacks the brain of the mouse to ensure its existence in a vicious cycle. That's what memes are"
    ii. "That's like Dawkin's Theory of Memes. The idea is to keep existing."
        1. "I think memes are kinda divisive. At least the successful ones that keep existing."
            a. "What about funny memes or the ones on the Edgy Teens page?"
            b. "I don't think the memes about all of us being extremely stressed and depressed are divisive. They're quite unifying."
            c. "But that's also a sort of underlying anxiety or anger at the system of education"
        2. "It seems people either love a meme or hate the meme."
        3. "Look at Hillary Clinton! She literally had no memes and Donald Trump had tons of memes. I think that's why he won."
        4. "He was controversial and the memes about him were divisive. But Hillary stick to tautology and conventional wisdom. She couldn't be put into a meme."
        5. "The existence of Donald Trump memes explain some sort of rage at the system that Hillary perpetuated."
    iii. "I think making a start-up with a meme is impossible to do."
    iv. "There's no such thing as a good or bad meme. It's a virus and it just reproduces. There doesn't have to be a mean to the end of the meme, but it certainly produces effects."
    v. "Information is necessary but not exactly sufficient" (A necessary and sufficient condition of another means that the former statement is true if and only if the latter is true.) Ex. "If A then B"
        1. "Having something doesn't mean it's true."
2. Strange Loops
    a. "What's a strange loop?"
        i. "A quintessential example would be M.C Escher's *Drawing Hands*.
        ii. "It moves upwards and downwards and then back the solution. Like the sentence, 'This sentence is False.'"
            1. "You can say that you're wrong about something but then it's like, you're right about being wrong."
            2. "I know that I know nothing."
        iii. How important is self reference?

1. “How is it that I’m a strange loop?”
    a. “Does this mean that humans have self-referential qualities?”
        i. “No, because then it would say ‘I have a quality that is a strange loop.’ Maybe it’s like saying ‘I am self-reference.’”
    b. “I need to read this book.” (*Godel, Escher, Bach* or *I Am A Strange Loop*)