Bubbles: Data Science for Human Minds (88-275)

Prof. Simon DeDeo, TA Zach Wojtowicz (zdw@andrew.cmu.edu)
MW 3–4:20, Porter Hall A18A; office hours Porter Hall 321, set by poll in first week

Course goals: You will learn how people think together, and how that goes wrong. You will be able to help us do better in the future.

Pre-requisites: willingness and initiative to work with real-world data.

Readings: An Attempt at Exhausting a Place in Paris (entire book), due October 1st
Ten Arguments for Deleting Your Social Media Accounts (entire book), due November 19th

Week one: Illusion (August 27th)
  * Optical Illusions
  * Social Illusions [reading handed out: Bayesian Reasoning for Intelligent People (BRIP)]

Week two: Reason (September 3rd)
  * No class Monday—Labor Day
  * An introduction to Bayesian Reasoning, Hume's Argument Against Miracles [BRIP reading due]

Week three: Minds (September 10th)
  * Cultural Evolution and Aumann's Agreement Theorem [short, in-class quiz on Bayes]
  * The New Atlantis System [reading handed out: Rules for Social Minds (RSM)]

Week four: Rules (September 17th)
  * Designing Social Minds: a Report on Tuesday's Experiments
  * Rules for Social Minds [RSM reading due; in-class seminar; hackathon team lists due at end of class; groups must be at least two, at most four]

Week five: Revolutions (September 24th)
  * Big Norms: London, Paris, Tianamen Square
  * Natural Language Processing [writing assignment due: An attempt at Exhausting a Street in Pittsburgh; reading handed out: Information Theory for Intelligent People (ITIP)]

Week six: Life (October 1st)
  * An attempt at exhausting an Attempt at Exhausting a Street in Pittsburgh
  * Coding, Zach Masterclass [hackathon project proposals due]

Week seven: Information (October 8th)
  * Red Queens and Rock-Paper-Scissors [ITIP reading due; short, in-class quiz]
  * Proposal discussion; methods, tools, and concepts
  [Hackathon begins at 4:20 pm, October 10th; ends at 3 pm, October 15th]

Week eight: You (October 15th)
  * Hackathon Presentations
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Week nine: Other Minds (October 22nd)
* The Beauty Contest and the Princess Bride [reading handed out: Satoshi Nakamoto e-mail (SNE)]
* Stag Hunts and Common Knowledge [reading handed out: Tail Risk for Intelligent People]

Week ten: Augmentation (October 29th)
* BitCoin [SNE reading due]
* Cascades and Revolutions [TRIP reading due]

Week eleven: Evolution (November 5th)
* Words as Organisms
* The Error Catastrophe

Week twelve: Feedback (November 12th)
* Social Recursion and Fixed Points
* Feedback and Coarse-Graining
[bonus: a position post on Lanier reading, see below; due November 13th]

Week thirteen: Networks (November 19th)
* Should you delete your social media account [in-class seminar]
* No class Wednesday—Thanksgiving break

Week fourteen: Capitalism (November 26th)
* Why capitalism is so great [reading handed out: Vote on Values, Bet on Beliefs (VVBB)]
* Why capitalism is so great?

Week fifteen: Beyond (December 3rd)
* A Modest Proposal [VVBB reading due]
* Final Class

Final papers due December 7th, by e-mail to Zach

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Requirements: one joint mid-term hackathon; one final paper; one smaller written assignment.
You will recieve formal feedback via verbal and written evaluations at (1) mid-term, (2) final day.
You will find it helpful to take notes by hand. Please sit in the back if you intend to use a laptop.
Meet with Zach at least once before scheduling office hours with Simon.
Grading rubric. 60% final paper; 30% hackathon; 10% all other assignments. There is a 10% bonus for a position post on the Lanier reading.
Ask questions at any point during any lecture.