**Building an Online Behavior for Healthcare by Henry Kautz**

* Henry Kautz
  + AT&T Bell Labs for graduate school
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  + University of Rochester
  + National Science Foundation
  + WAYO Radio DJ
* Leveraging Online Behavior for Public Health
  + Use online behavior “exhaust” to answer public health questions
    - Exhaust
      * Search, social media, video,…
      * Population scale
    - Questions
      * Diseases
* Twitter health: Predicting Spread of Contagious Disease
  + Took keywords from twitter posts; had gps
  + Keep track of sicknesses
  + Geolocation analysis
    - Keep track of friends
    - Could tell if they were tweeting from the same place
  + Kept track of factors that influences spread of disease
* nEmesis: Locating Sources of Foodborne Illness
  + kept track of reports of food poisoning
  + did experiments at Las Vegas
  + made application
  + Results
    - 9 vs 6 demerits
    - 57% C grades
    - Unlicensed fish vendor found
* MEW: Mental Health Evaluation from Web Data
  + Patient must proactively seek care
  + Why not rely on social media
    - People are fake
  + Data sources
    - Ground truth
      * Took surveys using scales
  + Platform
    - Take survey and search history to find mental health conditions
  + Task 1
    - Detect anxiety given online data at time T
    - Rf
    - 3-fold cv
  + Task 2:
    - Take score(t1), online(t1), online(t2) to get score(t2)
* Building an online behavior observatory
  + - Motivation
      * Relied on one-off systems
    - Create quick, accessible, and modular open source behavior observatory
    - Dashboards
      * Problem of informed consent
      * Patient dashboard
        + Health recommendations
      * Researcher dashboard
        + Keep track of data status
* Emerging Project
  + Imbed true symbolic reasoning inside a neural engine
  + Enable super-human and super-neuro combinatorial reasoning
  + Help GPT solve mouse going through maze or solving a zebra logic puzzle
    - Did not solve zebra logic puzzle well
  + Approach
    - Prompt GPT to recognize situations that require logical reasoning
      * Specify tools to try – SAT engine, Prolog, theorem prover
    - Same approach can be used for thought experiment