AI and Me: Personal Reflections on the Next Era of Health Research

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AI Against Me



From east to west

- "Conventional" quantitative social science methods
- A non-binary social scientist

Me On AI



- 2 Al certificate programs
- 5 Al courses

- "Al in the Social Sciences" Open Classroom series
- Al interest group with 30+ graduate students
- Graduates landing data scientist positions

Me With AI

From "for" to "with"

Human-machine partnership

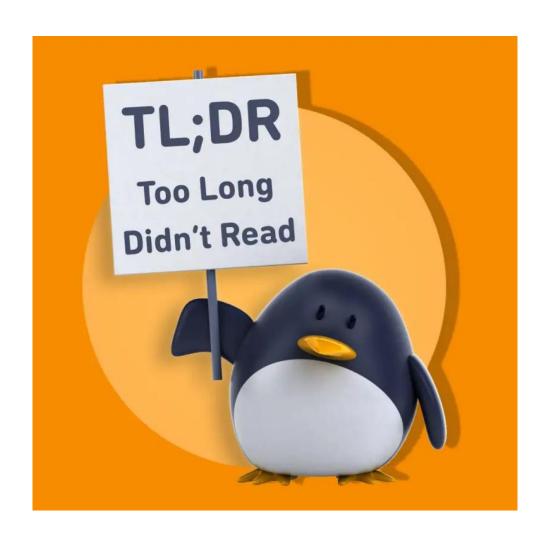
Coding & Debugging





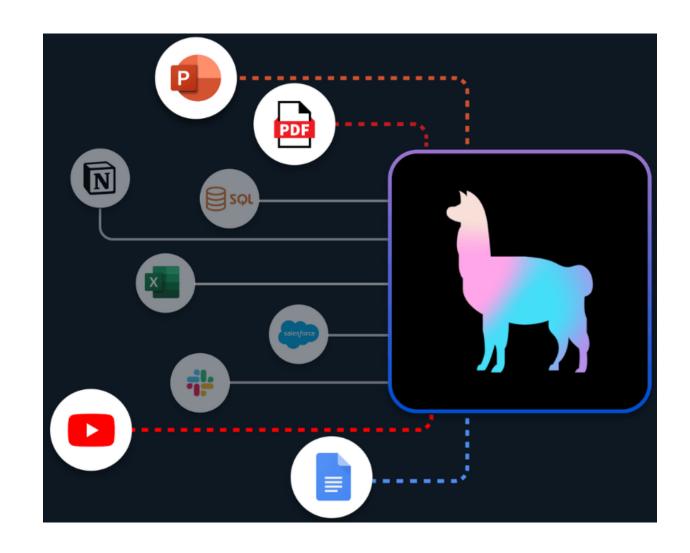
Literature Summarization





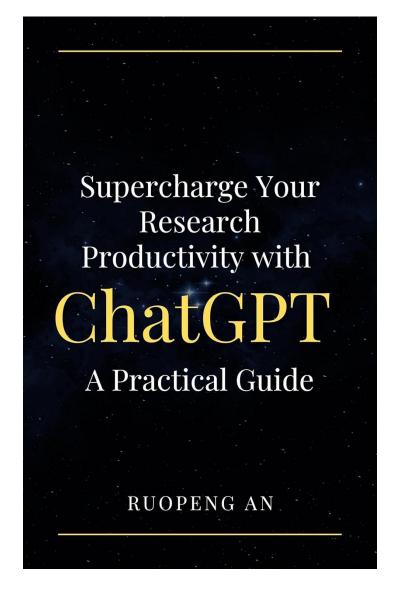
Data Extractions





A Book of Experiment





- 1. Identify research ideas
- 2. Formulate research hypotheses
- 3. Undertake literature reviews
- 4. Select research design
 - 5. Develop research instruments
- 6. Handle data collection and management
- 7. Analyze quantitative and qualitative data
- 8. Draft research papers and reports
- 9. Address peer review comments
- 10. Disseminate study findings



My Research Using AI



Fight Against Exaggerations in News



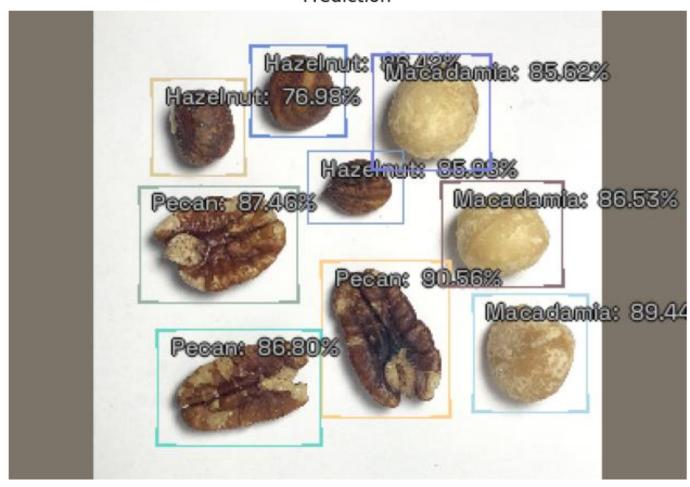


- Original: "Yogurt contributing to obesity epidemic, study claims"
- Model-revised: "Most yogurt products in UK have too much sugar to be considered healthy"

Estimate Nutritional Value from Nut Consumption



Prediction



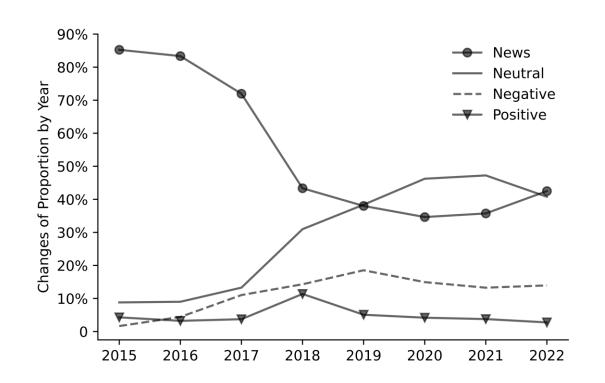
Predict Obesity with Self-reported Height & Weight

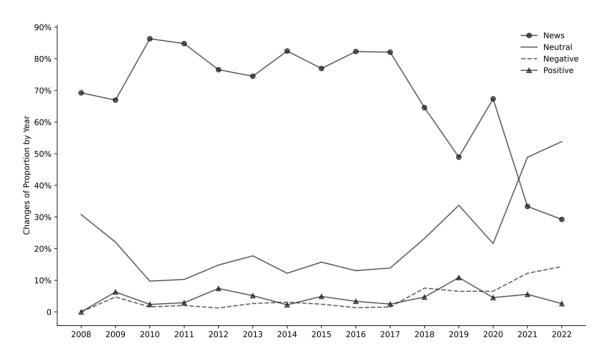




Track Sentiments Towards Health Policies







Evaluate ChatGPT's Medical Diagnosis Capacity



Setting

I am testing the differences of diagnostic capacities between ChatGPT and Chinese primary-care doctors. Now you are a primary-care doctor in China, and a patient has come for a consultation. Please conduct a detailed medical history inquiry, make a diagnosis, and prescribe appropriate treatment medications.



Chief comp

Case 1: I've been experiencing chest pain recently.

Case 2: Lately, I've been feeling anxious, having difficulty falling asleep, and experiencing a decreased appetite.

Case 3: My child is having loose stools.

Case 4: I've been feeling constantly dry and thirsty lately.

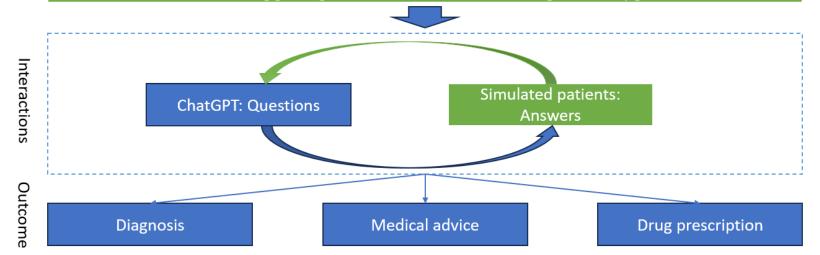
Case 5: Doctor, I started having a runny nose and coughing two days ago.

Case 6: Doctor, I feel like I can't breathe well, and I'm wheezing heavily.

Case 7: Doctor, my cough hasn't been improving, and I also have a slight fever.

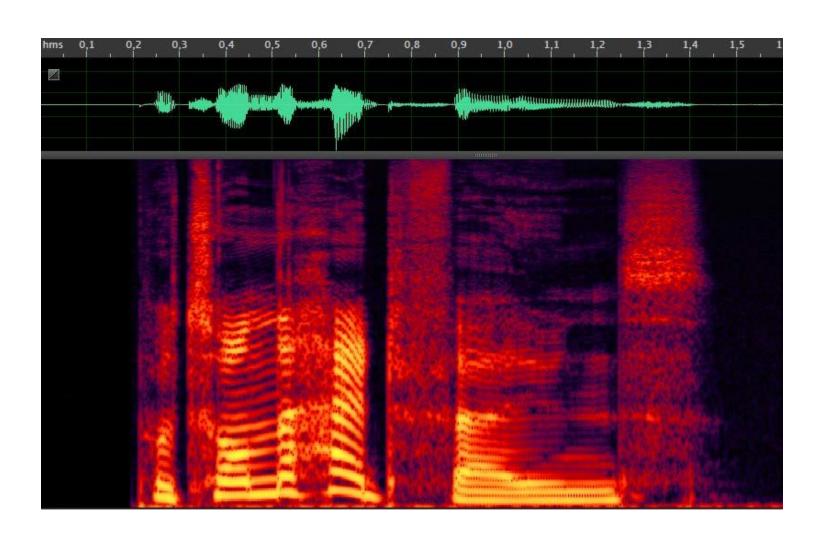
Case 8: Doctor, I've been feeling uncomfortable down below recently. My skin is broken, and it's a bit painful.

Case 9: Doctor, there's something growing down there, and I'm worried it might affect my girlfriend.



Predict Obesity with Voices





Qualitative Data Analysis







AI & Data Science Learning Resources at Brown School

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Upcoming Talk on Zoom





Open Classroom | Bridging Bytes & Bonds: The AI

Transformation in Social Work

Tuesday, November 14, 2023

[⊙] 12:30 am - 1:30 pm, Central, Virtual

Register here



AI in the Social Sciences Open Classroom Series



<u>Write Effective ChatGPT Prompts to Boost Research Productivity (Part I) – YouTube</u>

Write Effective ChatGPT Prompts to Boost Research Productivity (Part 2) - YouTube

<u>Super-intelligence, Frankenstein, and Post-humanism: AI Ethics Beyond Data and Algorithmic Bias - YouTube</u>

Applications of AI and Big Data Analytics in Obesity Research - YouTube

<u>Artificial Intelligence: Implications for Social Equity and Bias – YouTube</u>

<u>Artificial Intelligence For Everyone – YouTube</u>

<u>Artificial Intelligence: Applications, Promises, Pitfalls, and Misperceptions - YouTube</u>

Online Advanced Certificate Program





Artificial Intelligence Applications for Health Data

Sign up here