

# Logistics: Project

- Project presentation (next week in lectures)
  - Everyone is expected to attend both lectures
  - 10 minutes for presentation + 1~2 minutes for QA and transition

Dec 6	Ming Gao, Boyan Tian, Jiayi Zhang
	Ruowen Xu, Yucen Zhong
	Jiajun Sun, Xianchun Zeng, Miao Qin
	David Sarpong, Alex Wollam
	Cenhao Li, Ruiwei Xiao, Yang Yi
	Aayush Dhakal, Subash Khanal
Dec 9	Tejas Mattur, Run Zhang, Jacob Dodd
	Yiding Tao, Xiangyu Chen
	Danielle Beaulieu, Kaushik Dutta
	Qihang Huang, Zheng Wang, Zhuomin Li
	Daisy Wang, Xinyi Ye

# Logistics: Project

- Project report
  - Due: [Dec 9](#) (no late submissions)
  - Up to 6 pages (plus unlimited number of pages for only references/citations)
  - No strict format requirements
    - You are encouraged to use standard templates, such as [AAAI](#) format or [NeurIPS](#) format
  - For research projects
    - Your report should be structured in a way **similar to the research papers** we have read throughout the semester. (e.g., include introduction, related work, research problem or formulation, your proposed approach, results, conclusions).
  - For literature surveys
    - Do not summarize papers one by one.  
Find a theme, categorize papers, and put them in context.
    - Example: [Making Better Use of the Crowd: How Crowdsourcing Can Advance Machine Learning Research](#). Vaughan. JMLR 2018.

# Assignment 4

- Due this Friday
  - Check your late-day usages if you plan to use them
  - Check the list of talks on Piazza
  - Report requirement
    - At least two pages (in a reasonable format)
    - Should contain at least
      1. Summary
      2. Your thoughts (in a critical manner)
      3. Connection to this course and future work

# Reminder on The Grades (Copied from Lecture 1)

- Condition on you complete all other requirements satisfactorily, your final grades are determined by your final project
  - A+: Your project is close to be published in top venues
  - A: I'm happy to use your project as model projects in the future
  - A-: Overall good but might be better (in reports/presentation/approaches/...)
  - B+ or lower: There are more significant flaws in the project (e.g., not well-motivated problems, major issues in result interpretation/explanation, etc)
- Your final grades will be decreased from the above for missing reviews / homework issues / non-participation using the grading break-up in the syllabus
  - Follow the standard mapping (>93%: A, 90-93%: A-, ... )

# Reminder on The Grades (Copied from Lecture 1)

## Class Participation

- Participation is important for this course
- I plan to enforce the participation requirement
  - A non-linear grading scheme
    - Most students will either get full credits or 0 credits for participation.
    - Examples:
      - Attend every lecture but rarely participate in discussion: 0 credits for participation
      - Attend less than 60~70% of the lectures: 0 credits for participation

# Peer Review

- Please submit the peer review by 6pm

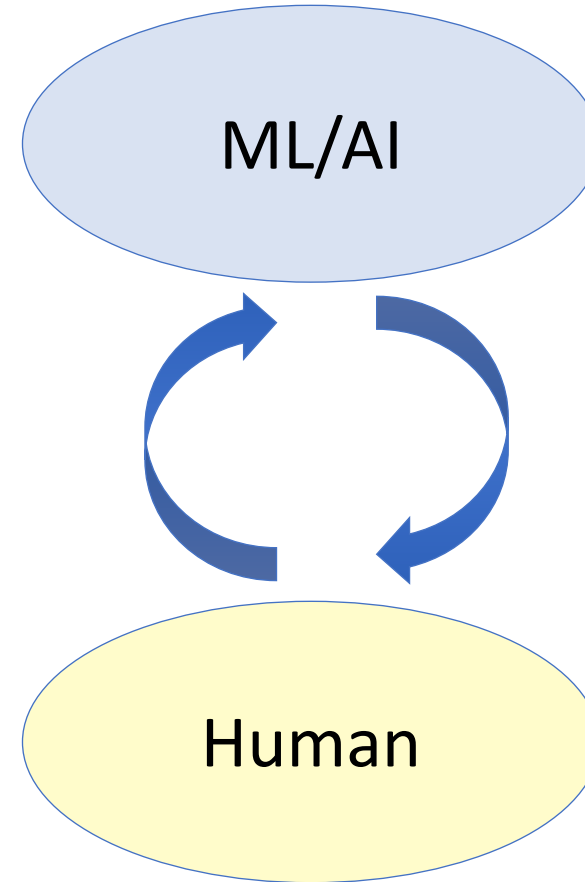
# Lecture 22

## AI-Assisted Decision Making

Instructor: Chien-Ju (CJ) Ho

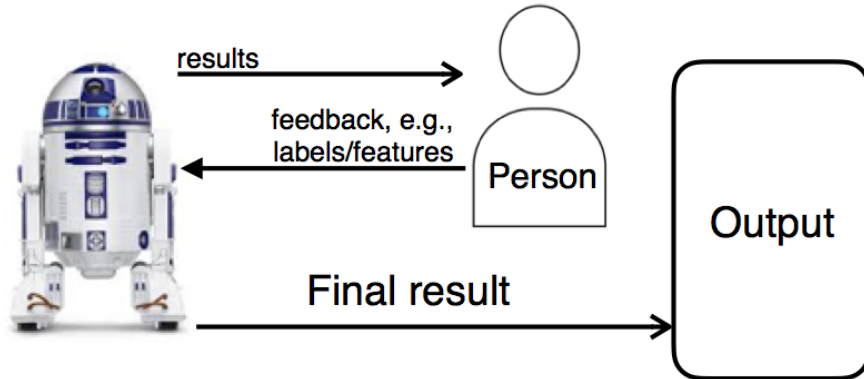
# Interactions between Human and AI

- How AI learns from humans
  - Label aggregation
  - Incentive design
  - Biased input
- How AI impacts humans
  - Fairness
  - Transparency / Explainability
  - Strategic manipulation





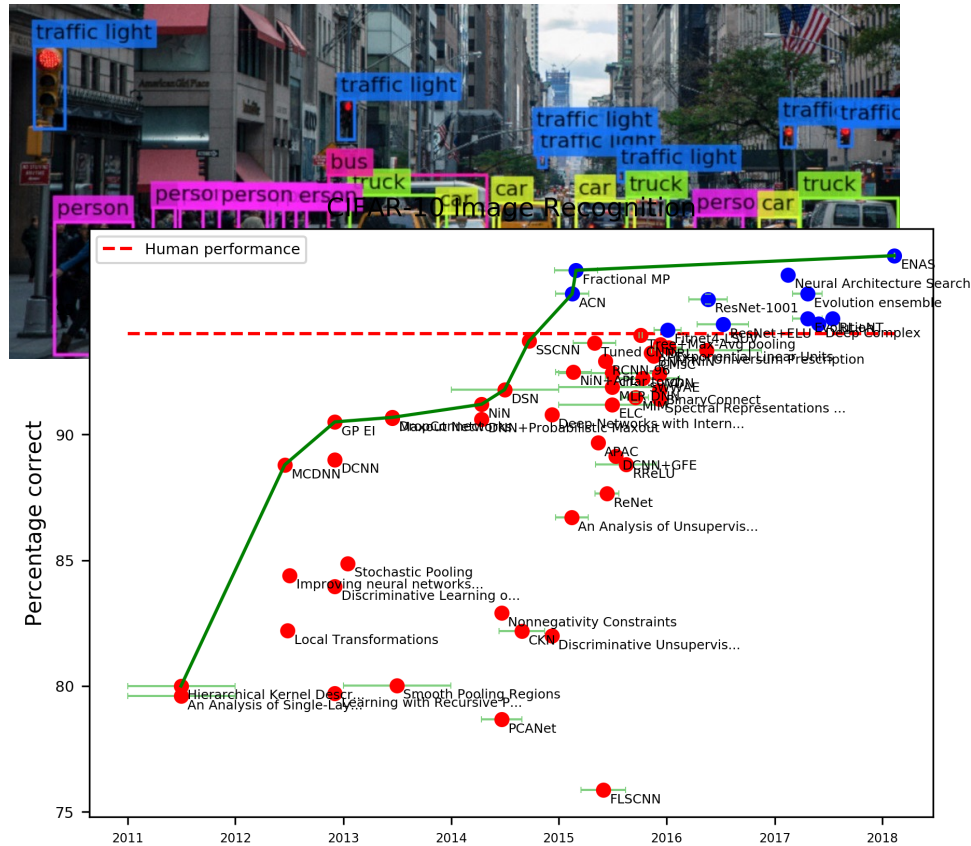
# Human-in-the-Loop Machine Learning



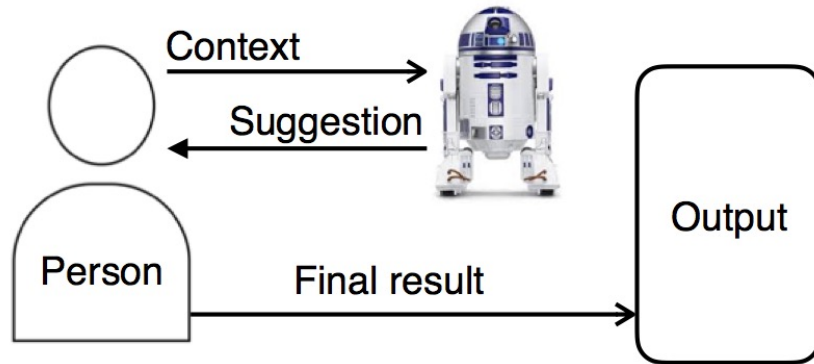
- Modeling human behavior
  - **Aggregating** noisy information contributed by humans
  - Designing **incentives** to encourage high-quality data
  - Addressing complex tasks through workflow or crowd collaborations
  - ...

# ML Starts to Achieve Superhuman Performance

- At least in some domains

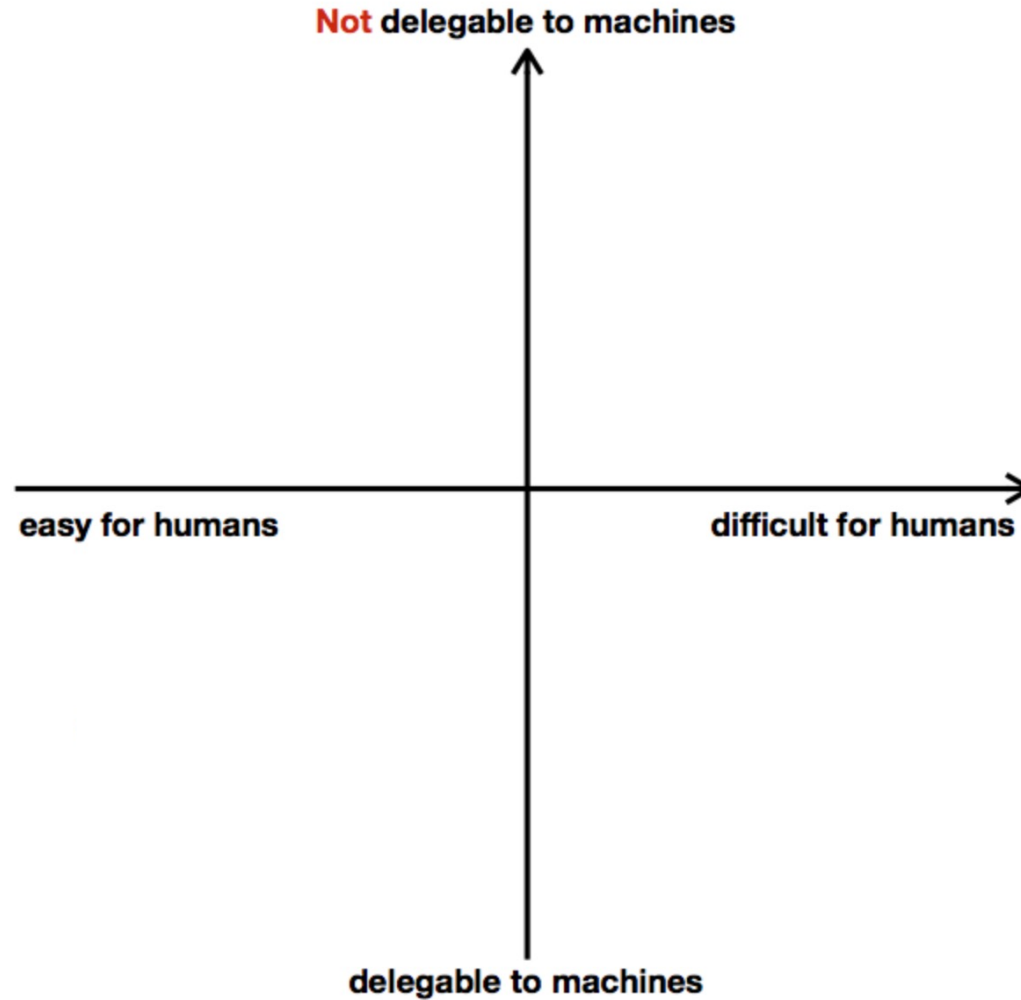


# Machine-in-the-Loop Decision Making

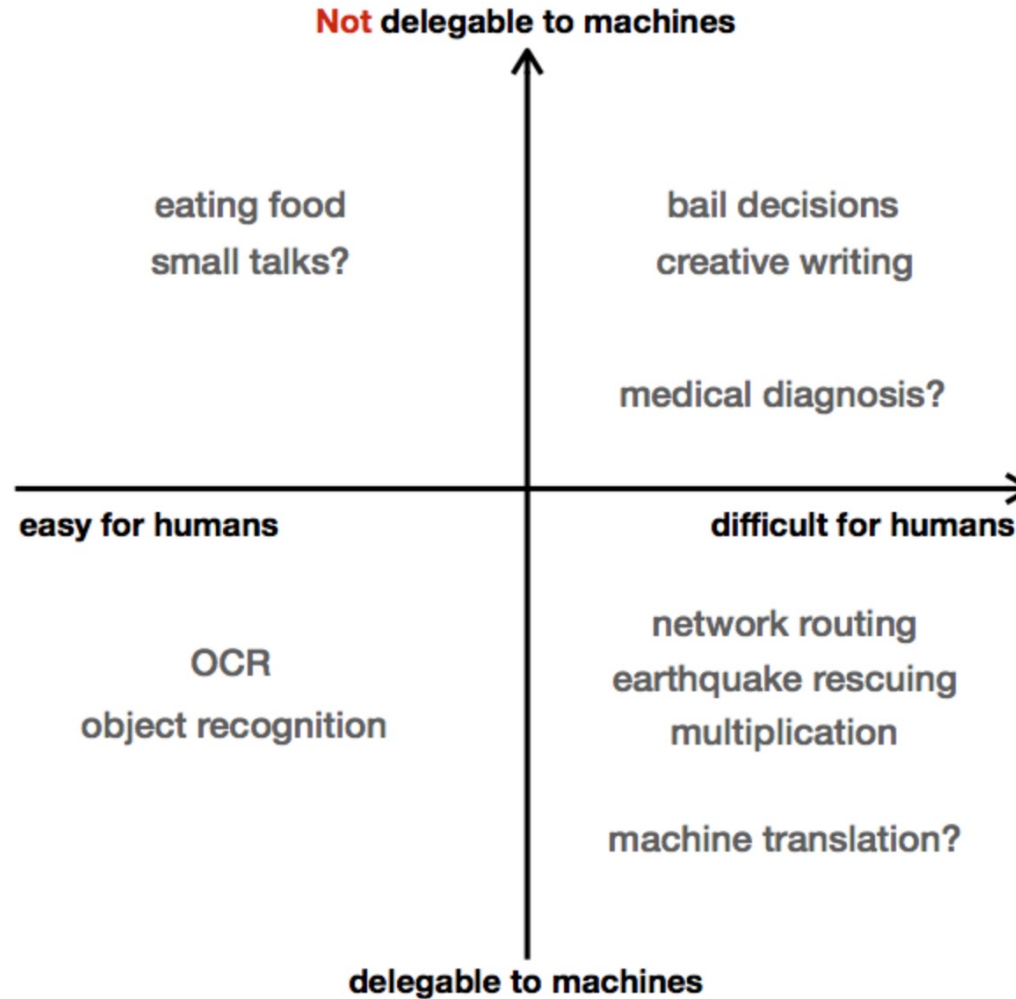


- Model how humans model AI (this lecture)
  - Fairness / Ethical considerations
  - Transparency / Interpretation
  - Trust / Reliance
  - ...

# What **Can** AI Do => What **Should** AI do



# What Can AI Do => What Should AI do



# Human-Centered Machine Learning

- From **Human-in-the-Loop** to **Machine-in-the-Loop**
- Human-in-the-loop
  - Modeling human behavior in computation
  - Design AI/ML that account for human behavior
- Machine-in-the-loop
  - Model how humans model AI (this lecture)
  - Design AI/ML that account for humans' mental models (next lecture)