

UGS 302 ETHICAL AI: GOOD SYSTEMS

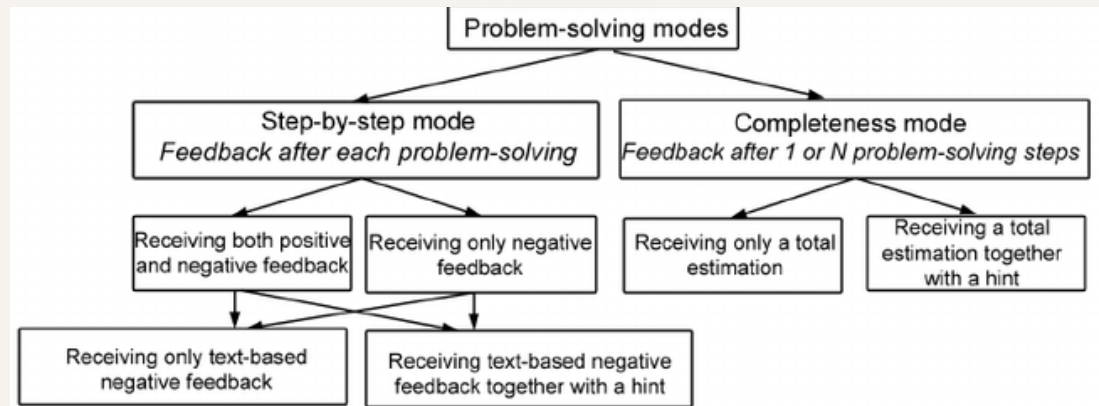
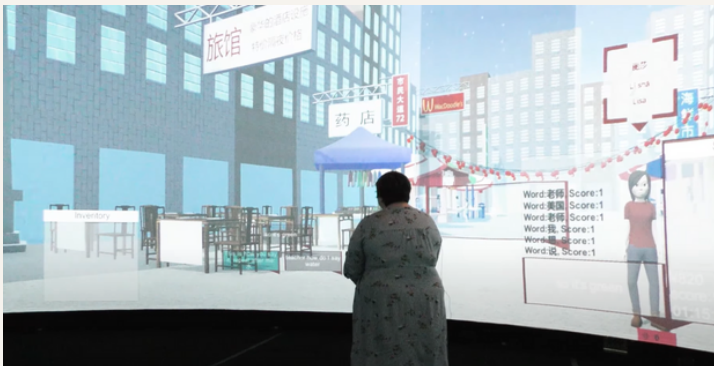
ETHICS IN AI EDUCATION

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ABOUT AIED

USE CASES:

- INTELLIGENT TUTORING SYSTEMS
- CHATBOTS
- VIRTUAL LEARNING ENVIRONMENTS



(ANOHINA-NAUMECA, 2007)

ADVANTAGES:

- PROVIDE ASSISTANCE TO TEACHERS
- QUICKLY DECIPHER PATTERNS, CREATE MODELS, AND MAKE PREDICTIONS FROM DATASETS
- ASSESSING STUDENT PERFORMANCE THROUGH TESTS AND SENSORS

WHAT ABOUT THE DISADVANTAGES...?

ETHICS ISSUES



AND THEORIES

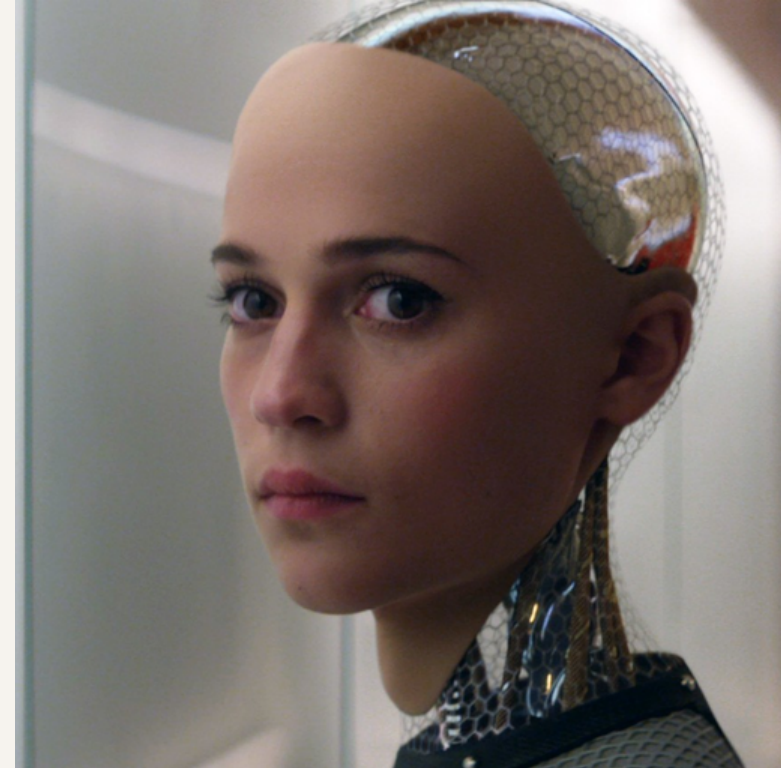
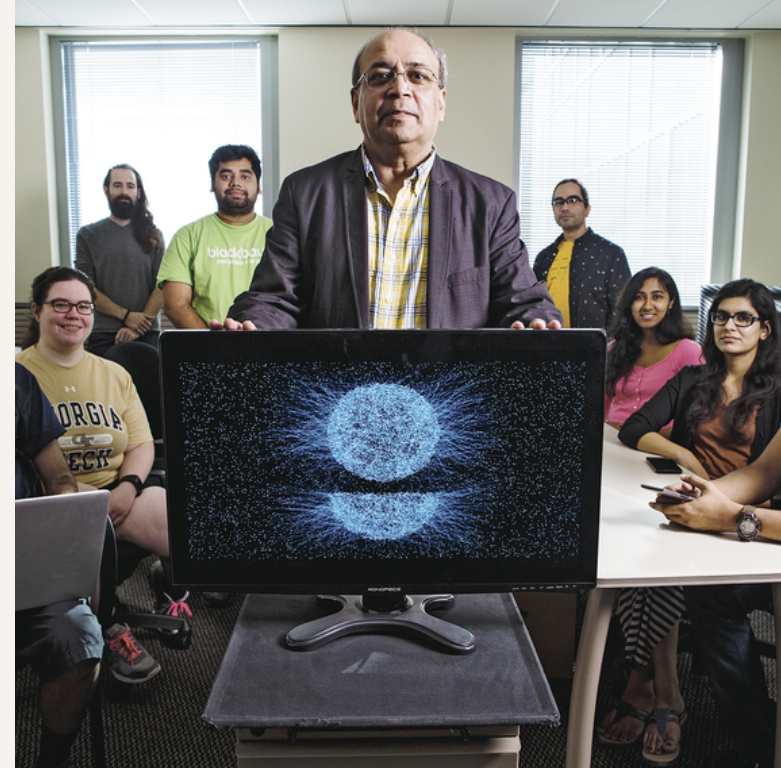
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- PRIVACY AND TRANSPARENCY
 - Care ethics
 - Deontology
 - INACCURACIES AND BIASES
 - Rawls' social contract theory
 - SOCIAL IMPACTS AND RELATIONS
 - Chinese ethics
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PART ONE

- Jill Watson, **AI teaching assistant** (TA) at Georgia Institute of Technology, implemented by Dr. Ashok Goel
- **Deontology**: ground rules to promote transparency in the models produced and data utilized so educators can judge appropriately
- Does not rely on outcomes and can better put the needs of the user first
- Example: Santa Clara Principles
- Increase accountability; Microsoft and Google firing their ethics teams since 2020

PRIVACY

USER'S CONSENT



- Chinese schools are experimenting with AI with wearable sensors
- Research **data** belonging to the researcher versus companies since students may not be at the age to provide **consent**
- To what degree can data stay **anonymized** and still provide effective information for learning?
- **Care ethics**: When programmed to play the role of a caretaker in a relationship, AI can simulate human sympathies and compassionate behaviors.

PRIVACY

TRANSPARENCY AND DATA
OWNERSHIP



ALGORITHMIC BIASES

- IN 2020, UT AUSTIN ABANDONED ITS ADMISSIONS SYSTEM FOR PH.D. CANDIDATES CALLED GRADE (GRADUATE ADMISSIONS EVALUATOR)
- WHY? IT WAS TRAINED ON PAST ADMISSIONS DATA THAT THE COMPUTER SCIENCE DEPARTMENT REALIZED COULD NEGATIVELY IMPACT DIVERSITY, EQUITY, INCLUSION EFFORTS (BURKE, 2020).



ALGORITHMIC BIASES

- **HISTORICAL NARRATIVES AND TRENDS CAN OFTEN BE FOUNDED IN RACIST OR ABLEIST PRINCIPLES AND IDEOLOGIES THAT CANNOT ALLOW FOR FAIR JUDGEMENT OF CURRENT TRENDS**
- **“FAIRNESS IS ACHIEVED WHEN EACH AND EVERY INDIVIDUAL HAS ACCESS TO THE SERVICES SHE NEEDS.” (EKMEKCI & ARDA, 2015)**
- **RAWLS’S APPROACH TO JUSTICE AND FAIRNESS CAN BE IMPLEMENTED MARGINALIZED GROUPS AND THEIR NEEDS REMAIN UNACCOUNTED FOR IN PREVIOUS SYSTEMS**
- **CREATING FAIRER MODELS FOR LEARNING**

FABRICATING

MEANING

- **Chatbots** and other learning management systems are trained on datasets and sometimes can give fabricate to inaccurate content
- Large language models (LLMs) which “only have success in tasks that can be approached by manipulating linguistic form” (Bender and Gebru et al., 2021).
- “Word form” versus creating meaning
- Though these models only generate text, people “haven’t learned how to stop imagining the mind behind it.” (Weil, 2023).






SOCIAL IMPACTS

01. SOCIAL ROLE OF EDUCATION

- Should education even be technologized?
- Technology has made an increased “focus on education as Erziehung, or education as the learning of a skill or trade, to the detriment of education as Bildung, or education as character formation.” (Guilherme, 2019).

02. TEACHERS IN THE HISTORICAL CONTEXT

- In Chinese Ethics, the roles of each person in society are considered essential. The student-teacher dynamic where the teacher is the role model is important.
 - Teachers are supposed to be “benevolent”, “virtuous”, wise, and more (J. Li et al., 2020).
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CONCLUSION

- Deontology and care ethics can make sure the user's rights are put first
- Rawls' approach protects from implicit bias
- Chinese ethics question the social implications.
- AI should be involved to assist teachers in educating humans who are largely social creatures living in diverse circumstances



FUTURE IMPLICATIONS



AGE

- Systems for higher education and comparing them to middle and high school level
- Elementary school kids or daycares where smaller children and infants learn

TIME

- Long term research projects: impact on social and neurological levels of students from early-stage development
- AIEd systems are better suited for certain subjects than others

OTHER

- Economic, environmental, and political implications
- Interdisciplinary research

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