Artificial General Intelligence
Winter 2022
EECS 598-11
John E. Laird
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Meeting Times: MW 1:30-3:00PM
Room: 1017 DOW
Credits: 3
Graduate only
Prerequisites: EECS 492/592 or permission of instructor
Probably will **not** satisfy CSE breadth or depth requirements

This class will explore the computational structures and processes that can potentially support general intelligence. This will be a seminar course where students read, present, and discuss readings from AI and cognitive science, including psychology, linguistics, animal behavior, and neuroscience. Students will be evaluated on pre-class analyses of class topics, participation in class, and their final project/paper.

Planned topics include:
- Potential definitions of intelligence and AGI: a topic we will return to throughout the semester.
  - Properties of tasks, domains, and embodiment that potentially require AGI.
- Different levels of analysis of intelligence including neural, cognitive, rational, and social levels.
- Animal mental capabilities, including problem solving, learning, language, socialization, …
- Human mental capabilities, including perception, motor, problem solving, learning, language, socialization, …
  - Analysis of innate vs. learned mechanisms vs. learning strategies.
- Cognitive capabilities that are potentially necessary for general intelligence, including perception, categorization, identification, motor control, problem solving, reasoning, planning, metacognition, language, emotion, relational representations, and different forms of learning.
- Alternative approaches to integrating mental capabilities, with an emphasis on cognitive architectures such as Soar, ACT-R, Spaun, Clarion, LIDA, Icarus. Sigma, and LEABRA.
- Evaluation methods for AGI systems.
- Controversies over alternative approaches to AGI.
- Future approaches to AGI.