COMP3411 Week 01 Tutorial

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https://github.com/hharryyf/COMP3411-24T1-tutoring

Self Introduction

- Turn on your camera (hopefully)
- What's your name
- What year/degree are you in
- Why did you enroll in this course?
- What do you want to take away from the course?

About me

- Did this course in 2019
- Finished CS Honour year at UNSW in 2022
- Year 2 PhD student, studying the field of logic & general game playing
  - Supervisors: Michael Thielscher & Abdallah Saffidine
  - Solving Two-player Games with QBF Solvers in General Game Playing (AAMAS 2024)

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- Rationality: the ability to do the right thing
- Logical reasoning: premises $\longrightarrow$ conclusion

Q3: State of the Art

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- Discover and prove new mathematical theorems
  - Discover: semi-automated, AlphaTensor
  - Prove: semi-automated, Isabelle
- Perform a complex surgical operation
  - Semi-automated: medical imaging, surgery assistance da Vinci Surgical System

Q4: PEAS model

- PEAS: Performance measure, Environment, Actuator, and Sensor.
- Performance measure: “score" of the agent
- Environment: the surroundings of the agent
  - Simulated vs Embodied
  - Static vs Dynamic
  - Discrete vs continuous
  - Fully Observable vs Partially Observable
  - Deterministic vs Stochastic
  - Episodic vs Sequential
  - Single vs Multi-agent
- Actuator: “part" responsible for the output
- Sensor: “part" receives the input

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  - P: normal rule of table tennis
  - E: room, light, ball, player
  - A: arm & racquet
  - S: camera
- Play Chess/Go/Poker

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- Play Chess/Go/Poker
  - P: normal rule of Chess/Go/Poker
  - E: normal environment of Chess/Go/Poker
  - A: moves
  - S: keyboard

Q4: PEAS examples

- Perform surgical operation

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- Perform surgical operation
  - P: survival? whether the tumor is removed.
  - E: patient, tumor
  - A: robotic arm with a surgical knife
  - S: camera, keyboard

Q5: ChatGPT strength and weaknesses

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- Weakness: False information