Intelligent Software Systems

Introduction

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Why are you here?

Why Intelligent Software Systems fail?

Activity 1

Introduce yourself to your group;

Find three common things among your group;

Email auto completion/compose

- What would you consider "intelligence" in this context?
- What information might be useful to help you achieve the intelligence?
- How do you know you have achieved the intelligence?
- What might be the challenges that prevent you from achieving such intelligence?

https://ai.googleblog.com/2018/05/smart-compose-using-neural-networks-to.html

Lack of high-quality training data
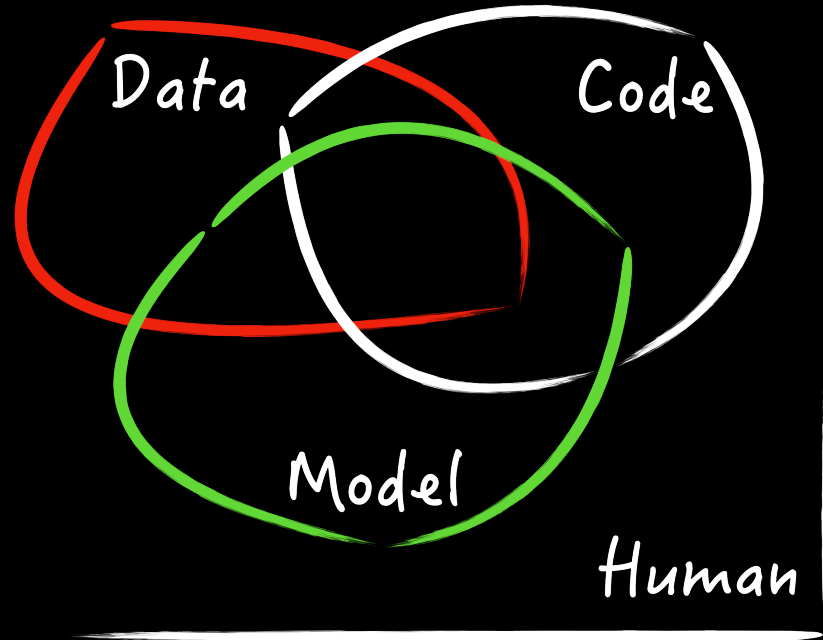
Inductive Reasoning

Inter-disciplinary collaborations and communication

Lack of Standardization

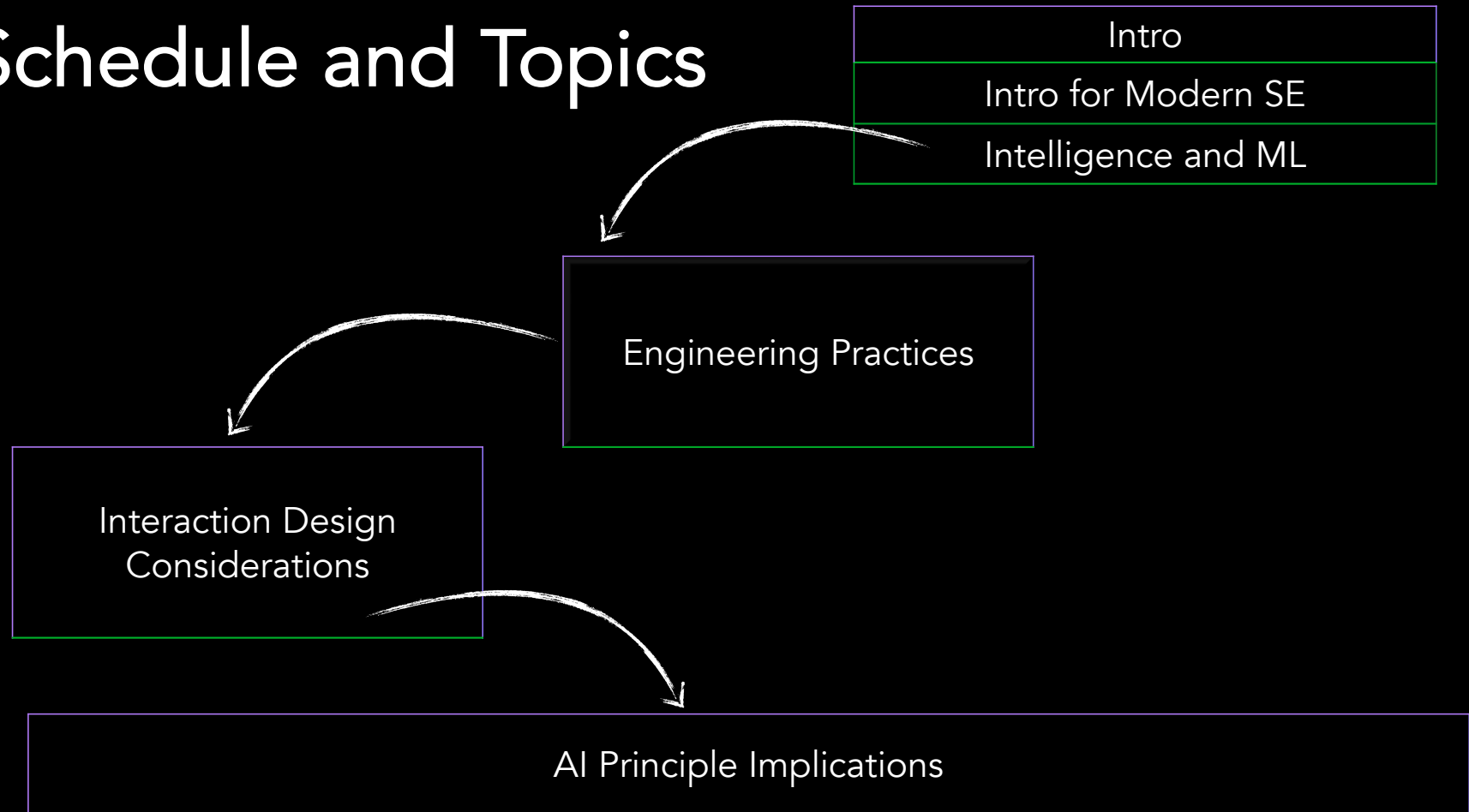Inadequate testing or wrong goals

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This course is about

Schedule and Topics

Intro
Intro for Modern SE
Intelligence and ML

Engineering Practices

Interaction Design Considerations

AI Principle Implications

Engineering Practices

Model Quality
From Model to System
Data Acquisition & Management
Requirement and AI
Team and Collaboration
Data Quality
System Quality and Continuous Delivery

Interaction Design Considerations

Human-AI Interaction Design
Visualization
Decision Making
Learning
Creativity
Inclusion

AI Principles

AI principles Overview
Safety
Security and Privacy
Accountability/Auditing
Interpretability and Explainability
Fairness
Value in AI Design

Transparency and Explainability

Safety and Security

Accountability

Privacy

Jun 2019, China
stry Code

May 2019, China
Beijing AI Principles

Mar 2019, United States
Seeking Ground

Mar 2019, United States
Ethically Aligned

Dec 2018, Canada
Montreal Declaration
University of Montreal

Jan 2017, United Sta
Asilomar AI P
Future of Life Institute

Prerequisite and Related Background

- SE (COMP 303, COMP 361, ECSE 321, ECSE 326, ….)

- AI (COMP 424, COMP 550, COMP 551, ECSE 526, …)

- Design (ECSE 424, GLIS 627, GLIS 626, …)

- Academic/Project Background survey (before the second lecture)

Activity 2

Think about one of your past project related to either SE, AI, or Design:

- Describe the problem you were aiming to address;
- Describe the biggest challenges you have faced on this project.

Assessment

Focus on collaborative learning

- Participation 10% (actively engaged in-class discussions and activities)

- Reading Reports 10% (reading notes on provided materials)

- Assignment 45% (individual assignment and peer review)

- Team project 35% (group of 3-5 people with different background)

During the Class

- Speak up when having questions

- Actively Participate in class activities

Todos

- Join Slack (https://comp585iss2022.slack.com)

  - Easiest way to reach out to me, Deeksha (your TA), and your peers;

  - Know more about each other;

  - Find/discuss common interests;

  - Collaborate on assignments and projects.

- Syllabus on [GitHub](#) (schedule, slides, links, assignment).

Who Are We

- Jin Guo

- Deeksha Arya

See you next week!