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Future of Technology
Office Hour - Ryan Liu (September 20, 2021)

Agenda

01 **OFFICE HOUR OVERVIEW**
What to Expect (Reminder / Refresher)

02 **COURSE JOURNEY**
What's Happened
What's Ahead
What's Trending

03 **DEEP(ER) DIVE**
Taxonomy Review
Bias and Edge Cases
Putting Into Practice

04 **OPEN FORUM Q&A**
Burning Questions

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Weekly Office Hours will be focused on the current open module and will have 3 general parts:

Course Journey	Deep(er) Dive	Open Forum Q&A
Recap of module, **reminder** of what's coming, and **sharing** of what's trending (i.e., externally in the news, from the Module Polls, Discussion Boards, etc.)	Focused **learning activities** comprised of interactive exercises, discussions, and information sharing tailored to the Module facilitated in plenary or breakouts	Opportunity for course participants to ask questions and seek further **learning enrichment** from the learning facilitator and fellow peers

Office Hour structure will be flexible and adjusted based on week-over-week student feedback

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02 Course Journey | What's Happened

Module	Activity Type	Assignment Name (Graded Components)	Release Date	Due Date
2	Drag & Drop	Drag-and-Drop Activity 2.1: Differences Between Machine Learning and Deep Learning	2021-09-16	2021-09-23
	Discussion	Discussion 2.1: Applying Machine Learning and Deep Learning to Your Organization		
	Drag & Drop	Drag-and-Drop Activity 2.2: Four Options to Approach the Build-or-Buy Choice		
	Discussion	Discussion 2.2: Improving AI Readiness For Organizations in Your Industry		
	Assignment	**Peer Review Assignment 2.1:** Creating a Data-Driven Culture in Your Organization		

02 Course Journey | Peer Reviews

Peer review assignments (four in total for the course) are accessible on Canvas when modules are released on Thursdays; September 16 in the case of this first one for Module 2.

Guidance for Peer Reviews:

- **Up to two assignments** will be assigned to you for peer review

- It is recommended to **give feedback** of at least one positive point and one suggestion

- Refer to **Instructions for Peer Review** within the assignment module for details

- Please complete all peer reviews assigned to you by **September 30, 2021** to earn full points for this assignment

- Next Peer Review assignment will be for Module 3

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02 Course Journey | What's Ahead

Looking ahead at what's next between weekly Office Hours with a few reminders:

* See Canvas Course Calendar for specifics

** Assignment can still be submitted for course completion until the program end date (Nov. 11) but may not receive feedback

Live Session Webinars

- Monday, Sep. 27, 8:30 AM PDT / 3:30 PM UTC: **Office Hour 3**
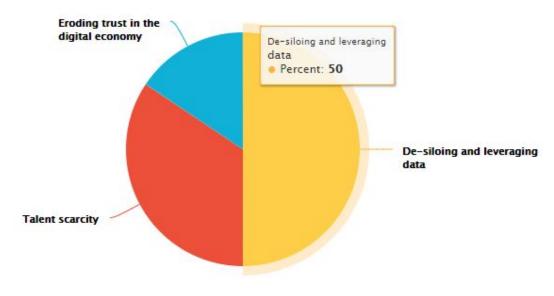
Modules 2 → 3 Transition

- Introducing the Capstone Project details **released**

- Complete Module 1 **Topic Discussions (x2)** postings and **Drag & Drop (x2)** activities*

- Complete Module 2 **Assignment 2.1** by Sep. 23 for feedback**

- **Module 3 Content** released Sep. 22, 5 PM PDT / Sep. 23, 12 AM UTC
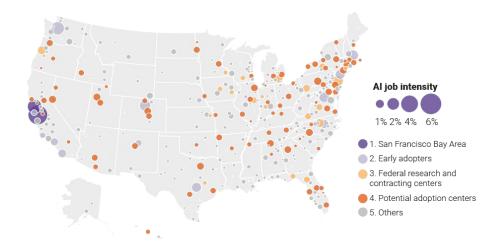
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Poll 2.1: The Impact of Colliding Trends on Your Industry

Reflect on your industry or an industry of your choice. Which colliding trend do you think will have the biggest impact on your industry in the next 3–5 years?

De-siloing and leveraging data
- Percent: **50**

Eroding trust in the digital economy

De-siloing and leveraging data

Talent scarcity

(As of Sep. 19)

Discussion 2.2: Improving the AI Readiness of Organizations in Your Industry

AI job intensity
1% 2% 4% 6%

1. San Francisco Bay Area
2. Early adopters
3. Federal research and contracting centers
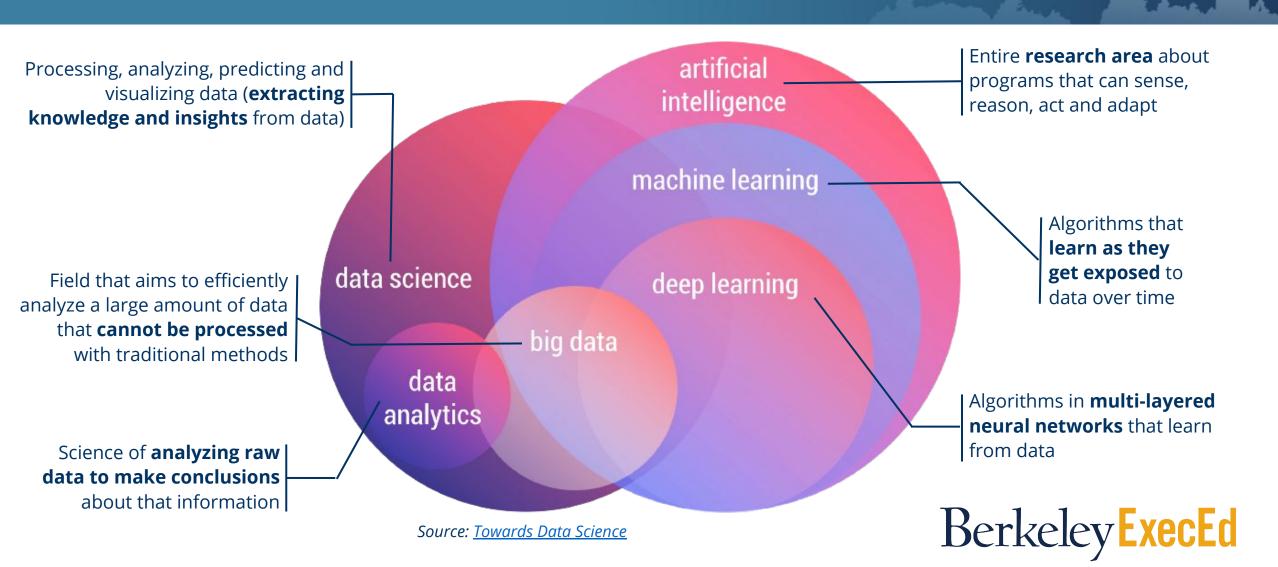4. Potential adoption centers
5. Others

Five metro areas account for **two-thirds of AI activity** nationwide...more than 50% of the areas Brookings looked at make up just 5% of AI activity. That signals not just a major geographical concentration for AI development, but also for future economic progress.

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No globally accepted definition of AI, yet…

Source: 123rf.com

Processing, analyzing, predicting and visualizing data (**extracting knowledge and insights** from data)

Entire **research area** about programs that can sense, reason, act and adapt

artificial intelligence

machine learning

Algorithms that **learn as they get exposed** to data over time

Field that aims to efficiently analyze a large amount of data that **cannot be processed** with traditional methods

data science

deep learning

big data

data analytics

Algorithms in **multi-layered neural networks** that learn from data

Science of **analyzing raw data to make conclusions** about that information

Source: Towards Data Science

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BIAS
Blacklist vs. Whitelist
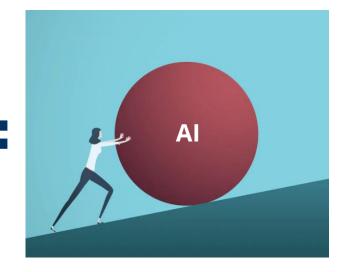
EDGE CASES
Dogfooding...Dog or Food?

UPHILL BATTLE
Lower the Slope

Source: Predera

Source: Live With AI

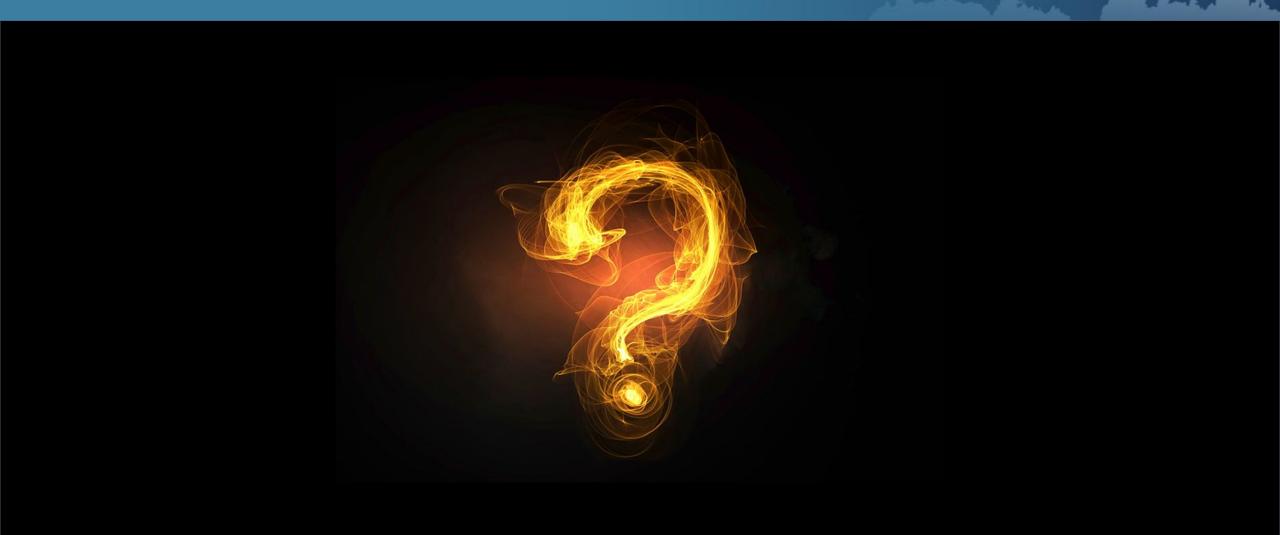BerkeleyExecEd

03 Deep(er) Dive | Putting Into Practice

Practice Mode: We're going to apply your learnings in the form of an exercise focused on increasing awareness of AI **bias** and **edge cases**.

Working individually or as a team, we will breakout with the following steps:

- Choose **one consumer** (e.g., Smartphone Camera Photography) **OR industry** (e.g., Predictive Analytics) AI solution

- Discuss and come-up with at least **one bias and edge case** that is a challenge for the AI solution

- Come back together to **recap** the bias and edge case per person or team

- Goal is to not focus on the deep technical aspects of the bias or edge case, but the **human-centric implications** that create the uphill battle for AI adoption

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04 Open Forum Q&A | Burning Questions

Thank You!

Looking Forward to Next Time!!!

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Appendix A | Course Overview

Key Dates:
- Start Date: September 2, 2021
- End Date: November 11, 2021
- Last Day for Refunds: September 16, 2021 [Module 2, Day 1]
- Last Day for Deferrals: September 30, 2021 [Module 4, Day 1]

Program Details:
- Duration: 9 Weeks
- Modules release: Every Thursday
- Canvas Live Course ID: 3412
  - Modules will be released on a weekly basis based on schedule on the right

Live Session Details:
- Faculty Webinars: 4
- Learning Facilitators Webinar: 1, Intro Webinar
- Office Hours: 1 Per Week
- Networking Session: 1, Virtual Networking (September 17, 2021)

Program Outline & Schedule:

Module #	Module Name	Release Date
-	Program Orientation	2021-09-02
Module 1	Introduction to Tech Futures	2021-09-09
Module 2	Artificial Intelligence and Data Science	2021-09-16
Module 3	Compute Power	2021-09-23
Module 4	Internet of Everything	2021-09-30
Module 5	Robotics and Automation	2021-10-07
Module 6	Cybersecurity	2021-10-14
Module 7	Fintech and Blockchain	2021-10-21
Module 8	Portfolio Strategy	2021-10-28

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Appendix B | Course Calendar

Module	Activity Type	Assignment Name	Release Date	Due Date
1	Drag & Drop	Five Steps of the Gartner's Hype Cycle	2021-09-09	2021-09-16
	Discussion	Applying Gartner's Hype Cycle to Leverage a Technology in Your Organization		
	Drag & Drop	Strategic Implications Based on S-Curve		
	Discussion	Uncovering New Opportunities by Merging Technologies		
	Assignment	**Assignment 1.1: Analyzing the Evolution, Colliding Trends, and Strategic Implications of a Technology**		
2	Drag & Drop	Drag-and-Drop Activity 2.1: Differences Between Machine Learning and Deep Learning	2021-09-16	2021-09-23
	Discussion	Discussion 2.1: Applying Machine Learning and Deep Learning to Your Organization		
	Drag & Drop	Drag-and-Drop Activity 2.2: Four Options to Approach the Build-or-Buy Choice		
	Discussion	Discussion 2.2: Improving AI Readiness For Organizations in Your Industry		
	Peer reviewed	**Peer Review Assignment 2.1: Creating a Data-Driven Culture in Your Organization**		
3	Drag & Drop	Drag-and-Drop Activity 3.1: Three Types of Computing	2021-09-23	2021-09-30
	Discussion	Discussion 3.1: Deciding Between a Public or a Private Cloud in Your Industry		
	Discussion	Discussion 3.2: Creating Compute Power Resilience in Your Organization		
	Peer reviewed	**Peer Review Assignment 3.1: Addressing a Problem Using Compute Power**		
4	Drag & Drop	Drag-and-Drop Activity 4.1: Four Levers of Data Generation	2021-09-30	2021-10-07
	Discussion	Discussion 4.1: Potential Applications of IoE in Your Industry		
	Drag & Drop	Drag-and-Drop Activity 4.2: Augmented Reality vs. Virtual Reality		
	Discussion	Discussion 4.2: Leveraging Colliding Trends of IoE in Your Organization		
	Drag & Drop	Drag-and-Drop Activity 4.3: Three Approaches for Safeguarding Data		
	Assignment	**Assignment 4.1: Leveraging IoE Ecosystem to Build a Multi-Sided Platform**		

Module	Activity Type	Assignment Name	Release Date	Due Date
5	Drag & Drop	Drag-and-Drop Activity 5.1: Four Dimensions of Industrial Robots	2021-10-07	2021-10-14
	Discussion	Discussion 5.1: Applications of Robotics in Your Industry		
	Drag & Drop	Drag-and-Drop Activity 5.2: Four Views for the Future of Work		
	Discussion	Discussion 5.2: Planning for Symbio-Intelligence for Your Organization's Future		
	Peer reviewed	**Peer Review Assignment 5.1: Enabling Human-Machine Productivity in Your Organization**		
6	Drag & Drop	Drag-and-Drop Activity 6.1: Four Types of Cyber Threats	2021-10-14	2021-10-21
	Discussion	Discussion 6.1: Strategies to Reduce Potential Risk in Cybersecurity		
	Drag & Drop	Drag-and-Drop Activity 6.2: Steps in the NIST Incident Response Framework		
	Discussion	Discussion 6.2: Rethinking Cybersecurity in Your Organization		
	Assignment	**Assignment 6.1: Creating a Plan to Ensure Cybersecurity**		
7	Drag & Drop	Drag-and-Drop Activity 7.1: Six Core Functions of the Financial Industry	2021-10-21	2021-10-28
	Discussion	Discussion 7.1: Disrupting Financial Industry Using Cryptocurrencies		
	Discussion	Discussion 7.2: Analyzing a Fintech Regulation		
	Drag & Drop	Drag-and-Drop Activity 7.2: Three Categories of Blockchain		
	Peer reviewed	**Peer Review Assignment 7.1: Applying Digital Ledger to a Business Transaction**		
8	Drag & Drop	Drag-and-Drop Activity 8.1: Understanding Four Stages of Technology	2021-10-28	2021-11-04
	Discussion	Discussion 8.1: Investing in Pacing and Key Technologies in Your Industry		
	Drag & Drop	Drag-and-Drop Activity 8.2: Managing Adjacent vs. Transformational Innovation		
	Discussion	Discussion 8.2: Key Takeaways from This Program		
	Assignment	**Assignment 8.1: Improving on Your Business Portfolio**		

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Appendix C | Completion Requirements

To successfully complete the program and get a certification of completion, participants must:

Earn
80/100
points

&

Complete
Capstone
Project

Assignments
- 8 Assignments (4 Peer Review Graded, 4 LF Graded)
- Each Assignment: 4 Points; **_32 Points in Total_**

Drag & Drop
- 16 Activities (Completion tracked in Canvas)
- Each Drag & Drop: 1 Point; **_16 Points in Total_**

Topic Discussions
- 16 Topics (Emeritus Program Support Graded)
- Each Topic Discussion: 2 Points; **_32 Points in Total_**

Capstone Project

- Capstone will be graded by Learning Facilitator (LF)
- Capstone Total Points: **_20 Points_**

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