AI: Managers, not Makers
Artificial Intelligence In Business

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Today

Learning Objectives
- Position AI and ML topics in business school curriculum.
- Share experiences and available materials.
- Gather input on current struggles.

Agenda
1. Consumption versus Production
2. Random Techniques and Ideas
3. Content for You

Somehow the acronym / mnemonic CRY seemed right...
Consumption versus Production

Producing versus Consuming Artificial Intelligence

- Advanced tools becoming easier and easier.
  - Once reports, then spreadsheets, then regression, now ML...
- Expectations for sophistication becoming pervasive.
- Pressure to close gap accelerating.

https://sloanreview.mit.edu/article/reskilling-talent-to-shrink-technology-gaps/
Why does production versus consumption matter?

- We, personally, are likely interested in creating models.
  - ✔ But the majority of students will be consumers, not producers.
- Even consumption role benefits from understanding production.
  - ✔ Need savviness to avoid becoming pointy-haired boss in Dilbert.
- Organizational advantage depends more on consumption than production.
  - ✔ Our students influence that consumption.

How then can we improve consumption through our classes? Five ideas that I've tried...
1. Raising awareness of inevitability of cognitive biases.

- Producing models helps make bias concrete.
  - Imperfections in "objective" data.
  - Degrees of freedom in model creation; e.g., garden of forking paths.
  - Hunger for a model that "works".
  - Change column name, then reveal actual name (e.g., gender, race, etc.).
  - Embed omitted information in available variables (e.g., correlate available data with hidden attribute).

*If students learn only one thing, I want it to be this.*
Can your students tell “could” from “should”?

Ethics of wielding an analytical hammer

- Organizations no longer ask themselves:
  “Could we do X with data?”
  The answer is now often “yes”.

- Instead, now:
  “Should we do X with data?”

We didn't have to consider "should" if we couldn't. But now we can.

- Topics like governance are not headline-worthy.
- But no engineer wants a headline of “bridge collapses”
- Like engineering matured from ad hoc beginnings, organizations need ethical processes-- IS can lead.

http://sloanreview.mit.edu/article/the-ethics-of-wielding-an-analytical-hammer/
2. Practicing critical thinking.

1. I provide a dataset with a focal question.
2. I randomly assign two groups opposite positions.
3. Groups present in favor of their position and question the other group's presentation.

- Despite arbitrary positions, students somehow align with their assigned position.
- The value is more in the scrutiny of the opposing view than in the support for their own position.

I do mini-version of this with news articles as well. ("What 3 questions would you ask the authors of this story? Do you believe the article?")

3. Learning in new ways.

Setup:
- People already know rules.
- Play a few rounds with neighbor and record.
- Each build model to play.
- Play more using models.

Really rich exercise:
- Are you teaching machine?
- Do you learn from machine? How?
- How can you work with the machine?

Sneaks in new technical models as well as adversarial learning, cold start, equilibria.

4. Tailoring content to individual students.

- Advanced questions with exercises. I position these as the "director's cut".
- Additional models? Hyperparameters? Additional features?
5. Graduating from school conditions.

Dependent...

Panicking Student

My computer isn't working.

Sorry. What isn't working?

Sam

Panicking Student

I get an error.

What error? Can you send me your script?

Sam

Panicking Student

[script]

Ahh, I see. [solution]

Sam

Panicking Student

Thanks! Mostest amazingest prof ever!!!

More independent...

Panicking Student

I'm getting an error in this [script].

Ahh, I see. [solution]

Sam

Panicking Student

Thanks! Mostest amazingest prof ever!!!

Even more independent...

Panicking Student

Everything OK?

Sam

Student

I had a problem but I figured it out.

I'm sure most of you already do this. Tarpitting helps.
Quick overview of content available for you....
9+ year research program. Each year, I research the use of analytics, ML, and AI in business.

- Dozens of managerial & executive interviews
- Large (3K+) global survey

"Me, Myself, and AI" podcast

https://sloanreview.mit.edu/audio-series/me-myself-and-ai/

- Season 1: Fall 2020
- Season 2: Now, Spring 2021
- Season 3: Just renewed! Fall 2021

Season 1:

- This Crazy Wave We’re Riding: Walmart’s Prakhar Mehrotra on the Ups and Downs of AI
- Advancing Health Care With AI: Humana’s Slawek Kierner Talks Synthetic Data and Real Lives
- ‘The First Day Is the Worst Day’: DHL’s Gina Chung on How AI Improves Over Time
- Better Together: Mattias Ulbrich on Combining Coffee, Business, and Technology at Porsche
- Fashion Forecasting: Arti Zeighami on Implementing AI at H&M Group
- Tech and Ethics: The World Economic Forum’s Kay Firth-Butterfield on Doing the Right Thing in AI
"Me, Myself, and AI" podcast

Season 2:

Less Algorithm, More Application: Lyft’s Craig Martell

Games, Teams, and Moonshots: Google Cloud’s Will Grannis

Learning, Engagement, and Empowerment: 1-800-Flowers’ Amit Shah

Designing a Better Future: Mastercard’s JoAnn Stonier

Prototypes, Pilots, and Polymers: Cooper Standard’s Chris Couch

DIY With AI: The Home Depot’s Huiming Qu

Coming in next few weeks:

Notre Dame-IBM Technology Ethics Lab

PepsiCo
My content includes:

- 12+ Industry reports → Background reading?
- 4 Case studies → Pre-reading + in class discussion?
- 50+ Online articles → In class "read and reflect"?
- 12+ Podcasts → Covid-safe substitutes for guests?

Your content?

- Online articles? Print articles?
- Feel free to send to me for a pre-read.
  - I don't handle submissions. But I am glad to give feedback.
  - I may not know what SMR will accept but I'm getting much better at knowing what editors will NOT accept.
  - I want to promote the IS voice here.
Normally people end by asking "any questions?". I won't. Instead, I have questions for this group.

1. How can we share artifacts to support teaching that we can collaboratively create?
   - I get the sense that we each spend time creating redundant materials, exercises.

2. What level of technical depth fits in a business school curriculum?

3. I struggle with the re-prep requirements each semester since so much changes. How do you avoid spending lots of time matching current developments with your enduring concepts?

4. How do you keep tool agnostic? Or is that a goal?

Thanks!
Contact me for content. Some I can't post publicly but can share individually.

Let me know if I can help you with SMR.