PROFESSIONAL EDUCATION
Short Programs

Machine Learning for Healthcare

All sessions taught by Prof. David Sontag except where noted

Day 1	
9 am - 9:30 am	Introduction
9:30 am – 10:30 am	Overview of clinical data & risk stratification
10:30 am – 12:30pm	Lab 1: Risk stratification
12:30 - 1:30 pm	Lunch
1:30 pm - 2 pm	Current state-of-the-art in ML for risk stratification
2 pm – 4 pm	Lab 2: Clinical NLP
4:00 pm – 4:30pm	Current state-of-the-art in clinical NLP
4:30 pm – 6 pm	Clinician perspective *(Dr. Steven Horng, Beth Israel Deaconess Medical Center)*
Day 2	
9 am – 10:00 am	Recap of Day 1 and Q&A on Labs 1 and 2
10:00am – 11:30am	Using ML to guide treatment selection
11:30am – 12:30 pm	Lab 3: Causal inference from RCTs and observational data (real-world evidence)
12:30 - 1:30 pm	Lunch
1:30 pm – 3:00 pm	Lab 3 (continued)
3:00 pm – 3:30 pm	Current state-of-the-art in predicting disease progression & treatment effects
3:30 pm – 4:30 pm	Payer perspective (speaker leads predictive analytics for a major health insurance company)
4:30 pm – 5:00 pm	Detecting and mitigating dataset shift
5 pm - 6 pm	Health tech perspective 1 (speaker leads AI R&D for telemedicine startup)
Day 3	
9 am – 9:30 am	Recap of Day 2 and Q&A on Lab 3
9:30am – 11:00am	Survival modeling
11:00am – 12:30 pm	Lab 4: ML for medical imaging & interpretability
12:30 - 1:30 pm	Lunch
1:30 pm - 2 pm	Lab 4 (continued)
2 pm - 3 pm	Pharma perspective (speaker leads AI research team in pharma/biotech)
3 pm – 4 pm	Health tech perspective 2 (speaker leads AI R&D for medical imaging startup)
4 pm - 5 pm	Fairness, how to detect and mitigate bias
5 pm – 6 pm	Privacy, federated learning, and synthetic data generation