Announcing the proposed Undergraduate AI Certificate

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Why an AI Certificate? For whom?

• Because AI is ubiquitous
• Because all citizens should know something about how AI works, what it can do, what it can’t do, and what it shouldn’t do
• In particular, this certificate will be open to all undergraduates
• There may be tracks for those who want to create AI, and those who want to be knowledgeable and use AI
Certificate Requirements (12 credits)

• Intro to AI:  CS 463G or (proposed) AI in the World
• Machine Learning:  CS 460G or (proposed) Generative AI
• Computing Ethics:  CS 509 (proposal under review) or ICT205: Issues in Information and Communication Technology Policy
• Elective from a list that includes courses from: Business, Data Science, EE/ME, Math, Statistics, WRD (so far – additions welcome!)
CS 263: AI in the World Proposed Syllabus (1)

• Week 1: Goals of AI (use Norvig & Russell’s grid of think/act like humans, solve tasks humans solve) and history; what is intelligence?
• Week 2-3: “Classical” AI: introduce notions of deduction, logic programming, expert systems, planning, multi-agent systems, etc.
• Week 4: Basics of machine learning, to focus on how training data drives learned behaviors
• Week 5-8: Introduction to current AI tools
CS 263: AI in the World Proposed Syllabus (2)

• Week 9: Data is not value neutral – exploring data, information, knowledge
• Week 10: Fairness, bias, transparency, trust, explainability
• Week 11: Ethical frameworks and their application to AI technology and its uses
• Week 12: Legal policies
• Week 13: Intro to socio-technical systems
• Week 14: Current AI tools as socio-technical systems: how do big systems encode social and moral assumptions, how do they enforce social and moral systems?
• Week 15-16: Current Applications of AI and Review
CS 465: Generative AI draft proposal (1)

• Week 1: Course overview; what is generative AI?
• Week 2: Training genAI systems
• Week 3-4: Evaluating genAI systems
• Week 5: Rule-based generation
• Weeks 6-7: Markov chains and Naïve Bayes
CS 465: Generative AI draft proposal (2)

• Weeks 8-9: RNNs, LNNs, and GRUs
• Week 10-12: Complex Generative Methods
• Weeks 14-15: Applications of Generative Systems
• Week 16: Assorted topics
CS 509: Computer Ethics (proposed)

• Week 1: Intro and overview
• Weeks 2-9: Introduction to ethical theories (virtue ethics, deontology, utilitarianism, communitarianism, feminist ethics, capabilities)
• Week 10: Managing Knowledge
• Weeks 11-12: Personhood and Privacy
• Weeks 13-14: Technology and Society
• Weeks 15-16: Assorted topics
Computing and Technology Ethics
Engaging through Science Fiction

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