Next Classes and Conclusion

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Announcements/Reminders

- HW4 due today at 11:59pm
  - Using up to 3 late days is allowed
- Section on Tuesday, May 6, 3:30-4:20 in DMC100: Final review
- Final exam Tuesday, May 13, 2-4pm
  - Please use pen! (For scanning/grading purposes)
  - Do not write on the back of the exam, we added overflow space at the end (backs are OK for ungraded scratch work)
- Final project due May 8
- Office hours by request next week

Next classes to take next semester

- Natural Language Processing
- Deep Learning
- Robotics
- Sustainability
- Theory of Machine Learning

Natural Language Processing

- **CSCI 444: Natural Language Processing (Swabha Swayamdipta)**
  - Undergraduate NLP class, focused on language models
- **CSCI 544: Applied NLP (Jieyu Zhao)**
  - General NLP class, recently updated to focus more on language models
- **CSCI 626: Text as Data (Morteza Dehghani)**
  - Applications of natural language processing to psychology research
- **CSCI 662: Advanced NLP (Jon May)**
  - Research-focused class, covering machine translation, dialogue, question answering, information extraction, etc.

Deep Learning

- **CSCI 566: Deep Learning and its Applications (Yan Liu)**
  - Masters level class focused on deep learning
  - Previous editions covered image generation models, variants of Transformers, graph neural networks, etc.

Robotics & Cyber-Physical Systems

- (Not exactly ML topics but highly related)
- **CSCI 445L: Introduction to Robotics (Heather Culbertson)**
  - Hands-on introduction to robotics, will work with real physical robots
- **CSCI 545: Robotics (Daniel Seita)**
  - More advanced course covering control theory, kinematics, dynamics, sensor processing
  - Seems to get more into the math, which involves a lot of linear algebra
- **CSCI 513: Autonomous Cyber-Physical Systems (Jyo Deshmukh)**
  - Controlling autonomous vehicles, drones, etc.
  - Includes reinforcement learning as well as non-ML techniques

Sustainability

- **CSCI 461: Artificial Intelligence for Sustainable Development (Bistra Dilkina)**
  - Project-based class focusing on AI for social good (e.g., sustainability, poverty, homelessness, health)
  - Includes discussions of research papers

Math & Machine Learning

- **Math 447: Mathematics of Machine Learning**
  - Math-focused class on machine learning
  - More detail on some topics like kernels/SVMs
  - Also will discuss ways to prove good test accuracy
- **CSCI 458: Numerical Methods**
  - More on methods like Newton's method, computing eigenvectors/eigenvalues, etc.
- **CSCI 611: Mathematics of High-Dimensional Data**
  - Includes discussion of clustering, imaging and neuroscience applications
- **CSCI 612: Optimization for the Information and Data Sciences**
  - Class on advanced optimization methods for convex problems
  - Goes beyond gradient descent to methods with faster convergence (e.g., how SVM's actually work)
  - How to handle constraints during optimization

Thank you!

- Thank you for a wonderful semester!