Speech representations
Wednesdays 9:30-10:45, AVW xxxx

Instructor information:
Carol Espy-Wilson
  Office: AVW 2221
  Email: espy@isr.umd.edu
Naomi Feldman
  Office: MMH 1413A
  Email: nhf@umd.edu
Anton Rytting
  Email: crytting@umd.edu

Course description:
This seminar surveys recent literature on computing low-level feature representations from the speech signal, examining these features’ utility for automatic speech recognition (ASR) tasks as well as their compatibility with human cognition.

Learning outcomes:
1. Students will demonstrate the ability to critically evaluate papers describing speech representations, from both an ASR and a cognitive standpoint.
2. Students will demonstrate the ability to conduct independent research related to speech representations in ASR and/or human cognition.

Grading policy:
Weekly posts to piazza: 10%
Class participation (including presentations): 40%
Final paper: 50%

Attendance policy:
- Religious holidays: The University of Maryland provides that students should not be penalized because of observances of their religious beliefs. Students shall be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment that is missed due to individual participation in religious observances. It is the student’s responsibility to inform the instructor of any intended absences for religious observances. You must inform the instructor in advance of the day to be missed.
- Medical Excuses: We will follow the Medical Excuse policy here: http://www.president.umd.edu/policies/v100g.html.

Academic honesty:
We follow the University’s policies on academic honesty. All cases of academic dishonesty will be penalized. Please review the Code of Academic Integrity used by this university: http://www.studenthonorcouncil.umd.edu/whatis.html.
For purposes of assignments and papers, we define plagiarism as intentionally or knowingly representing the words or ideas of another as one’s own in any academic exercise. Students who are not certain about how to avoid plagiarizing should visit the following websites:
What is plagiarism? from the University of Maryland Libraries
Avoiding plagiarism from the Purdue University Online Writing Lab (OWL)
What is plagiarism? from Georgetown University

Students with disabilities:
If you have a physical disability or a learning disability, it is your responsibility to bring it to our attention at the beginning of the course. We will make every effort to accommodate your needs.

Schedule:
Week 1 (8/31) - ASR overview
Week 2 (9/7) - cognitive overview
Week 3 (9/14) - DNN acoustic modeling overview
Week 4 (9/21) - Learning a front-end
Week 5 (9/28) - Learning a front-end
Week 6 (10/5) - Learning a front-end
Week 7 (10/12) - Attention in noisy environments
Week 8 (10/19) - Attention in noisy environments
Week 9 (10/26) - Attention in noisy environments; project proposals due
Week 10 (11/2) - Relationships between languages
Week 11 (11/9) - Relationships between languages
Week 12 (11/16) - Relationships between languages
Week 13 (11/30) - student presentations
Week 14 (12/7) - student presentations