LSA Institute 2019 (Course 335): Computational Morphophonology

Course instructors

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Colin Wilson, JHU (website, email), office hours: TBA

Course information

This course examines the phonological expression of morphology and related topics (e.g., prosodic templates, lexical subregularities), focusing on computational treatment of patterns that involve operations other than simple concatenation. There has recently been an explosion in the quantity of available morphophonological data (e.g., UniMorph) and the power of computational models to extract patterns from that data (e.g., results of the Universal Morphological Reinflection shared task). These developments provide exciting opportunities to evaluate and refine linguistic theories in light of an expanding database, to identify descriptive and explanatory limitations of existing "black box" models, and to develop novel theory-driven models of morphophonological analysis and learning.

Prerequisites and auditing

We welcome participation by all interested students, either through enrollment or auditing, and expect that knowledge and expertise will be varied. Some familiarity with data processing (e.g., with tidyverse or pandas) will be useful for completing the course project. We do not expect students to come in with a strong grasp of relevant computational models (e.g., finite-state and encoder-decoder formalisms) or their mathematical foundations (e.g., formal language theory and linear algebra) — instead, we hope that all will come to better understand these models, and especially their relationship to linguistic theory and description, through participation in the course. (If there is sufficient interest in certain models and associated toolkits, such as foma or PyTorch, we may allocate class time or organize extra sessions to provide basics tutorials.)

Assignments and grades

Grades will be based on class attendance and participation (show up and heckle us, 20%), written responses to reading questions (one write-up per week, 40%), and a final student-selected project on any topic related to morphophonology (5-8 pages, 40%).

Meeting times and location

Mondays & Thursdays 2:40 - 4:05 in Olson 207
note: Meeting scheduled for Thursday July 4 will be held on Wednesday, July 3 (at the regular time/place)
Class schedule and readings

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
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<tbody>
<tr>
<td>3</td>
<td>Monday 7/01</td>
<td>Encoder-decoder networks</td>
<td>Karpathy et al. (2015)</td>
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<td>4</td>
<td>Wednesday 7/03</td>
<td>Truncation</td>
<td>Alber &amp; Arndt-Lappe (2012)</td>
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<td>5</td>
<td>Monday 7/08</td>
<td>Reduplication</td>
<td>McCarthy &amp; Prince (1995)</td>
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<td>6</td>
<td>Thursday 7/11</td>
<td>Reduplication</td>
<td>Caballero (2006)</td>
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<td>7</td>
<td>Monday 7/15</td>
<td>Root-and-pattern</td>
<td>Kastner (2019)</td>
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<td>8</td>
<td>Thursday 7/18</td>
<td>Complex allomorphy</td>
<td>Baerman (2012)</td>
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We welcome suggestions for additional/replacement topics or readings!

References


