COMPUTATIONAL LINGUISTICS - MASTER OF SCIENCE (MS)

The professional master’s degree in computational linguistics, analytics, search and informatics (CLASIC) provides a solid foundation in both computer science and linguistics graduate coursework, as well as several courses focused on data-driven linguistics, computational linguistics and information processing.

Distance Education Option

Students can take individual courses toward a master’s degree or graduate certificate through distance education (online). For more information, connect with the individual graduate program directly.

Requirements

Students must complete at least 32 hours of approved graduate study, including a 2-credit capstone course focused on a publishable research project, which will run in conjunction with an internship or a CU-based research project. As part of the capstone, students will be evaluated by their employer or industry project manager. Students will also prepare a technical report on the completed project that the program directors and project leader will jointly evaluate.

Required Courses and Credits

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>LING 5030</td>
<td>Linguistic Phonetics</td>
<td>3</td>
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<tr>
<td>LING 5420</td>
<td>Morphology and Syntax</td>
<td>3</td>
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<tr>
<td>or LING 6450</td>
<td>Syntactic Analysis</td>
<td></td>
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<tr>
<td>LING 5430</td>
<td>Semantics and Pragmatics</td>
<td>3</td>
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Artificial Intelligence is covered by Natural Language Processing CSCI/LING 5832

Recommendations:

- CSCI 5417 Information Retrieval Systems
- or CSCI 5817 Database Systems
- CSCI 5454 Design and Analysis of Algorithms
- or CSCI 5444 Introduction to Theory of Computation
- or CSCI 5714 Formal Languages
- CSCI 5535 Fundamental Concepts of Programming Languages
- CSCI 5606 Principles of Numerical Computation
- or CSCI 5646 Numerical Linear Algebra
- CSCI 5839 User-Centered Design and Development 1

CLASIC Capstone (2 credits)

- CSCI 7000/ LING 7800 Current Topics in Computer Science (Capstone Project)

Core CLASIC - 4 courses; 3 required and 1 elective (12 credits)

- CSCI/LING 5832 Natural Language Processing

Plus one of (3)

- CSCI 5352 Network Analysis and Modeling
- CSCI 5502 Data Mining
- CSCI 5622 Machine Learning
- CSCI 6302 Speech Recognition and Synthesis
- CSCI 6622 Advanced Machine Learning
- CSCI 7000 Current Topics in Computer Science (Inference, Models & Simulation for Complex Systems)
- CSCI 7222 Topics in Nonsymbolic Artificial Intelligence (Probabilistic Models of Human & Machine Intelligence)
- CSCI 7222 Topics in Nonsymbolic Artificial Intelligence (Representation Learning for Language)
- LING 5200 Introduction to Computational Corpus Linguistics
- LING 5800 Open Topics in Linguistics (Machine Learning and Linguistics)
- LING 6300/3800 Topics in Language Use (Formal Models of Linguistics)
- LING 6520 Topics in Comparative Linguistics (Computational Grammars)
- PHIL 5440 Topics in Logic
- PHIL 5460 Modal Logic

Total Credit Hours 32

Learning Outcomes

The program is intended to:

- Provide a solid foundation in computer science, data-driven linguistics and natural language processing graduate coursework.
- Educate graduates to be specialists in the application of computers to the processing of natural languages, such as English, Chinese, Arabic and Urdu.
- Prepare students for jobs in the field of computational linguistics, also known as text analytics, natural language processing and informatics, a field critical to the success of mainstream global businesses who compete for employees qualified to address these needs.