Maha Alkhairy

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INTERESTS

Research and development position in machine learning, artificial intelligence and data mining - algorithms and application to health and natural language processing.

EDUCATION

NORTHEASTERN UNIVERSITY; Boston, MA *September 2013 – Present*
College of Computer and Information Science (CCIS)
Candidate for a Bachelor of Science degree in Computer Science with minor in Mathematics *Graduation May 2017*
GPA: 3.83 / 4.0 (excluding freshman year), 3.61 / 4.0 (including freshman year)
Honors: Dean's List (Fall 2014, Spring 2016, Fall 2016)
Courses:

Computer Science	Data Mining Techniques, Learning, Artificial Intelligence, Natural Language Processing, Theory of Computation, Human-Computer Interaction, Database Design, Algorithms and Data, Networks and Distributed Systems, Computer Systems, Software Development, Logic and Computation, Discrete Structures, Object Oriented Design, Fundamentals of Computer Science I & II
Mathematics	Statistics and Stochastic Processes, Probability and Statistics, Linear Algebra, Calculus I & II & III
Other	Introduction to Language and Linguistics, Foundations of Psychology, Embedded Design and Enabling Robotics, Chemistry I, Physics I

RESEARCH EXPERIENCE

LEARNING DISENTANGLED REPRESENTATION OF ASPECTS IN TEXT *January 2017 – Current*
SUPERVISORS: Professor Jan-Willem van de Meent & Byron Wallace, Northeastern University; Boston, MA
OBJECTIVE: Use deep learning to learn aspects context in text in a semi supervised manner

MODERN STANDARD ARABIC MORPHOLOGICAL ANALYZER *September 2015 – December 2016*
SUPERVISOR: Professor David Smith; Computer Science, Northeastern University; Boston, MA
OBJECTIVE: Create a deep Modern Standard Arabic (MSA) morphologizer that analyzes a MSA word into its components
- Designed the structure of regular expressions to represent the derivational nature of MSA morphology
- Used networks in Foma to encode MSA morphological patterns as finite state transducers
- Studied the different approaches to creating morphological analyzers

MODERN STANDARD ARABIC TEXT TO TRANSCRIPTION *January 2016 – August 2016*
SUPERVISOR: Professor Adam Cooper; Linguistics, Northeastern University; Boston, MA
OBJECTIVE: Create a system that phonetically transcribes Modern Standard Arabic text
- Created a system (finite state transducer) via Foma that applies the transcription rules to diacratized MSA text
- Studied the different approaches to creating a text to speech system

MODERN STANDARD ARABIC TEXT TRANSCRIPTION *June 2015 – December 2015*
SUPERVISOR: Professor Adam Cooper, Linguistics, Northeastern University; Boston, MA
OBJECTIVE: Learn the phonology of Modern Standard Arabic (MSA) and Create rules to Transcribe MSA Text
- Distinguished the phonemes of (MSA)
- Created rules to go from MSA graphemes to the corresponding phonemes and allophones
- Explored the syllable structure of Modern Standard Arabic
- Presented Results in Northeastern Linguistic department's poster session

TEACHING EXPERIENCE

CCIS, NORTHEASTERN UNIVERSITY; Boston, MA
Tutor for Fundamentals of Computer Science *June – July 2015*
- Worked 10 hours a week
- Held office hours to help students gain a better understanding of the material on the homework
- Graded the homework and provided detailed comments for areas of improvement

Tutor for Theory of Computation *January – May 2015*
- Aided the students by answering the questions on Piazza regularly
- Helped students gain a better understanding of the material by having one-on-one sessions by request

SKILLS

Programming Languages: Python, Foma, OpenFST; Familiar: CSS, HTML, Java, MySQL, JavaScript, C, C++
Software / Tools / APIs: Docker, pyspark, vim, Dr Racket, PyCharm, MySQL Workbench, NetBeans, Eclipse
Computer Systems: Windows, Linux (Ubuntu, Fedora), OS
Languages: Arabic (Native Speaker), English (Native Speaker)