John W. Hall

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EDUCATION

M.S. in Computer and Information Technology, **University of Pennsylvania**   *May 2019*
M.A. in Linguistics, **University of Illinois**   *May 2017*
   Major area: Computational Linguistics
   Graduate Fellowship – award granting educational training in the Linguistics Department
B.S. in Biomedical Engineering, **Vanderbilt University**   *May 2012*
   Cornelius Vanderbilt Scholar – Full tuition academic scholarship including research stipend

M.A. THESIS

"Examination of Machine Learning Methods for Multi-label Classification of Intellectual Property Docs"
- Applied variety of machine learning techniques to classification of a corpus of US patent grants
- Built corpus by bulk download of data, cleaning xml-tags, tokenization, and storing of text data
- Implemented multi-class document classifiers using the python sci-kit learn library including Naïve-Bayes, neural network, decision tree, support-vector-machine, and logistic regression
- Examined effectiveness of classifiers in multi-label output using a one-vs-all implementation

TECHNICAL SKILLS

Languages – Python, Java, C/C++, R/RStudio, HTML/CSS, Shell Scripting
Tools/Frameworks – NLTK, Flask, Sci-kit Learn, Bootstrap, LaTeX, Git, Linux, Windows, Blackboard
Skills – Natural Language Processing, Machine Learning, Web Development, Web Scraping

TEACHING EXPERIENCE

TA, **University of Illinois**, Champaign, IL   *Aug. to Dec. 2016*
Ling 402: *"Tools and Technology for Speech and Language Processing"*
- Guest-lectured and held office hours for introductory computing course of 40+ graduate and undergraduate linguistics students focusing on basic computing tools for natural language processing
- Topics included the Linux command line, shell scripting, Python programming, the Natural Language Toolkit library, proper documentation, data structures, recursion
- Constructed shell scripts to facilitate and automate grading of coding assignments
- Final project consisted of implementing the IBM Model 1 Statistical Machine Translator
- Assignments included implementing a spellchecker for orthography of Central Alaskan Yupik and code to transcribe Yupik orthography to phonetic representations reflecting phonological constraints

Instructor, **University of Illinois**, Champaign, IL   *Jan. to May 2016/2017*
Ling 270: *"Language, Technology, and Society"*
- Instructor for 30+ undergraduate-level students in lecture format pertaining to historical and modern language technologies and their social implications
- Led lecture and discussion of international writing systems and technologies with a focus on technical details, big-picture functions, and long-term ramifications for human-machine interactions
- Constructed relevant course material including lesson plans, assignments, quizzes, and examinations

Classroom Instructor and Tutor, **The Princeton Review**, Washington, DC   *Jan. 2012 to Present*
- Prepared lesson plans and lectured a combined 1300+ hours in small classroom settings, private tutoring sessions, and online classrooms
- Outlined and presented full range of science content according to a college-level syllabus including physics, general chemistry, organic chemistry, and biology
- Instructed post-graduate, college, and high school pupils on effective problem solving strategies for improving performance in college courses and on standardized tests including the MCAT and SAT