Benjamin Kane

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EDUCATION

University of Rochester — Rochester, NY

Bachelor of Science in Computer Science, Bachelor of Arts in Economics — **Anticipated May 2019**

- Current GPA: Computer Science: 4.00 – Total: 3.92 – Dean's List
- Robotics Club, Undergraduate Finance & Economics Council
- Education Abroad: *University of Bristol* — Jan 2018 – Jun 2018

RESEARCH EXPERIENCE

Department of Computer Science, University of Rochester — Rochester, NY

Research Assistant — **May 2017 – Present**

- Assist in development of LISSA Virtual Human, a schema-based conversation agent used in studies on improving social interaction. Created LISP code to extract context-independent "gist clauses" from user speech recognizer output, using feature-based pattern matching and transduction trees.
- Working on classifiers to predict turn-taking in LISSA dialogues using annotated transcript data and speech prosody.
- Two papers on the efficacy of LISSA dialogue in a study on elderly patients and the results of improved turn-taking, respectively, are currently in preparation.
- Annotate varied database of sentences with unscoped logical form (ULF) representations.
- Created code to generate natural inferences from the ULF-coded sentences for various implicative and factive verbs.
- Aid in task of modeling spatial relations from natural speech in "blocks world" and "room world" domains, with goal of using 3D models in commonsense reasoning and story understanding.

TEACHING EXPERIENCE

Department of Physics, University of Rochester — Rochester, NY

Teaching Intern for Physics Mechanics — **Aug 2016 – Dec 2016**

- Led weekly workshop in Classical Mechanics, teaching important physics concepts and essential problem-solving skills to group of 14 students. Provided feedback on homework assignments and held weekly office hours.

Teaching Assistant for Knowledge Representation & Reasoning in AI — **Aug 2018 – Present**

- Support students with complex topics in upper-level knowledge representation course, grade written homework assignments and Lisp programming assignments.

PUBLICATIONS & PRESENTATIONS

Workshop

- Kane B.; Luo, J. (2018). Do the Communities We Choose Shape our Political Beliefs? A Study of the Politicization of Topics in Online Social Groups. *To be presented in the 2018 IEEE Big Data Workshop on Big Social Media Data Management and Analysis (BSMDMA)*. Seattle, USA.
  Available at: http://csug.rochester.edu/u/bkane2/documents/BSMDMAPaper2018.pdf (Nov. 2018)

SELECTED COURSES

Computer Science: Natural Language Processing, Knowledge Representation & Reasoning in AI, Data Mining, Artificial Intelligence, Advanced Algorithms, Programming Language Design & Implementation, Theory of Computation, Web Technologies, Databases & Cloud Concepts, Data Structures and Algorithms
Economics, Physics, Mathematics: Behavioral Economics, Industrial Economics, Econometrics, Intermediate Microeconomics / Macroeconomics, Mechanics, Modern Physics, Statistics, Multidimensional Calculus, Linear Algebra.
Anticipated Fall 2018: Machine Learning, Computer Organization, Game Theory

ACADEMIC PROJECTS

- **Visulinga (Node.js):** developed prototype flashcard website aimed at helping individuals learn foreign languages through forming visual-semantic connections. Videos related to a word are generated automatically through web mining.
- **Planning Agent (LISP):** created a simple planning agent for standard "blocks world" domain. Given (virtual) table with blocks and goal structure, agent stacks blocks on table to achieve structure at lowest cost.
- **Machine Learning Implementation (Java):** implemented decision tree, logistic regression, and multilayer neural net classifiers. Analyzed performance and results of algorithms across various real-world datasets.