Chester Holtz

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Education

Bachelor of Science, Computer Science
University of Rochester, Rochester, NY, expected May 2017
Concentration: Artificial Intelligence (Machine Learning & Optimization)
Minor: Mathematics

Research Projects

Autism Spectrum Disorder Detection

- Goal: Predict Autism Spectrum Disorder among children undergoing diagnostic procedures.
- Implemented and applied OCR, de-identification, and de-skewing algorithms to extract natural language from scanned semi-structured and unstructured documents.
- Extracted lexical features, topic model features (LDA) and distributed features (doc2vec RNN features).
- Built ASD detection and keyword suggestion system (l_1, l_2-regularized svm, upsampling) to achieve 83.4% accuracy and 91.1% recall on our medical dataset.

(Robust) Emoji Embedding and Prediction

- Goal: Machine learning-based approach to emoji representation and prediction.
- Extended the Global Vectors for Word Representation (GloVe, Pennington et al.) algorithm to jointly learn emoji and word embeddings by imposing a prior regularization term on the Glove objective function to penalize distance between learned emoji representation and emoj-tag representation.
- Proposed novel representation of multi-party dialogues that encodes global conversation topics and local word semantics.
- Trained SVM, HMM, and RNN-LSTM models and evaluated each model with the emoji prediction task on the Reddit comments dataset.

Publications and Preprints

Jianbo Yuan, **Chester Holtz**, Tristam Smith, and Jiebo Luo, "*Autism Spectrum Disorder from Semi-structured and Unstructured Medical Data*", Eurasip Journal on Bioinformatics and Systems Biology, 2017.

Chester Holtz and Lee Murphy "*(Robust) Emoji Representation and Prediction in Dialogue Context*", (preprint available on request)

Hector A. Cardenas, **Chester Holtz**, Maria Janczak, Philip Meyers, and Nathaniel S. Potrepka "*A Refutation of the Clique-Based P=NP Proofs of LaPlante and Tamta-Pande-Dhami*", Arxiv: 1504.06890.

Tyler Hannan, **Chester Holtz**, and Jonathan Liao "*Comparative Analysis of Classic Garbage-Collection Algorithms for a Lisp-like Language*", Arxiv: 1505.00017.

Work Experience

Risk and Quantitative Technologies Intern Summer, 2016
JP Morgan Chase, Manhattan, NYC

- Designed and built framework to support analysis of business processes.
- Implemented an ETL(Extract, Transform, Load) system to manipulate and visualize structured and semi-structured data.

- Implemented approximate graph-similarity metric (Dijkman et al., 2009, 2011) to compare process models.
- Transformations and graph algorithms were written in Java. Used the QlikView Ajax API for the browser-based dashboard.

Teaching Experience

Computer Science Teaching Assistant

CSC 246/446 Machine Learning (graduate/undergraduate)	Spring 2017
CSC 240/440 Data Mining (graduate/undergraduate)	Fall 2016, Spring 2017
CSC 242 Artificial Intelligence	Spring 2016
CSC 172 Data Structures and Algorithms	Fall 2016
CSC 171 Introduction to Computer Science	Spring 2015
CSC 161 The Art of Programming	Fall 2015

MTH 201, 150 CSUG Tutor for Introduction to Probability and Discrete Mathematics

Select Courses

Computer Science

Graphical Models and Deep learning (graduate, current)
Advanced Machine Learning and Optimization (graduate)
Machine Learning
Machine Vision (current)
Design and Analysis of Algorithms
Data Mining
Artificial Intelligence
Autonomous Mobile Robots
Honors Research Seminar

Mathematics

Calculus and Linear Algebra (Honors)
Real Analysis
Abstract Algebra (current)
Probability Theory
Introduction to Statistics

Honors

Dean's Scholarship, University of Rochester
1st place in data science at DandyHacks, University of Rochester, 2016

Skills

Languages: Python(TensorFlow, Numpy, scikitlearn, NLTK) > Java = C/C++ > R = JavaScript
Tools: Git, Vim, Bash, Eclipse, Excel, LaTeX, Mathematica, Amazon MTurk, Moses