Joseph Lilleberg

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EDUCATION

University of California San Diego — 2016–2018
M.S. Computer Science - focus of Programming Languages, Compilers, and Software Engineering
- **Cumulative GPA: 3.487/4.0**

Southwest Minnesota State University — 2012–2016
B.S. Computer Science, B.A. Mathematics
- **Cumulative GPA: 3.81/4.0**

WORK EXPERIENCE

University of North Texas — 2015
Summer Research for Undergraduates in Computer Security | NSF funded research internship
- Prestigious competitive research opportunity with 5.3% acceptance rate; 10 selected applicants from a pool of 187.
- Researched the potential role brain wave scanners can play in computer security in Android and PC mediums.
- Developed applications to guess what predetermined number or image the user is thinking based on fluctuations in the readings of EEG waves.
- Wrote 80%+ of code base to process and filter raw EEG data from brain wave scanners using C#, Java, and Python.

Georgia State University — 2014
Summer Research for Undergraduates in High Performance Data Mining | NSF funded research internship
- Prestigious competitive research opportunity with 4.8% acceptance rate; 10 selected applicants from a pool of 208.
- Implemented an algorithm to categorize documents into a fixed number of predefined categories using Google's word2vec.
- Analyzed the accuracy of up to 18,000 text posts over 20 categories with word2vec using python and tf-idf; ∼90% accuracy.

SELECTED PROJECTS

Presidents of the United States Transcript Analysis (NLP) — 2020
- Data mined and cleaned 992 presidential transcripts, up to September 25, 2019, consisting of 3.8+ million words, or 22+ million of characters.
- Performed qualitative data analysis by generating 288 interactive plots to visualize sentiment analysis, topic modeling, term associations, empaths, term frequency, topic frequency, and word similarity.
- Developed a program to generate artificial presidential transcripts using recurrent neural networks (RNN).

Gauging Divergent Thinking In Visual Tasks Through Pupillometry and Eye Tracking — 2018
- Explored the correlation between the output of a visual task designed to induce divergent thinking and the participants pupil dilation and blink frequency using Pupil Labs open source eye tracking software
- Extracted, parsed, and assessed incoming data received from tracking the eye movement of 25 individuals using Python contributing to 100 lines of code; 40% of codebase.

Peers — 2017
- Developed an app to connect like minded individuals across UCSD to improve interdisciplinary research collaboration .
- Backend development for managing database functionality and communication with frontend using AWS: DynamoDB, Lambda, Cognito, API Gateway, and Simple Email Services.

SKILLS AND INTERESTS

Skills: Python (NumPy, Pandas, Scikit, Matplotlib, Plotly, TensorFlow), Data Mining and Visualization, Data and Quantitative Analysis, Decision Analysis, Predictive Modeling, Algorithms, Calculus, and Statistics) — **Tool Technologies** Git, Docker, AWS, Unix

PUBLICATIONS

J. Lilleberg, Y. Zhu and Y. Zhang, "Support vector machines and Word2vec for text classification with semantic features," 2015 IEEE 14th International Conference on Cognitive Informatics Cognitive Computing (ICCI*CC), Beijing, 2015, pp. 136-140. doi: 10.1109/ICCI-CC.2015.7259377