Jacob Fuehne

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EDUCATION

University of Illinois at Urbana-Champaign May 2021
Bachelor of Science in Computer Science and Linguistics GPA: 3.75/4.00

- Member of ACM's Special Interest Groups in Artificial Intelligence and Natural Language Learning
- Won 1st place in 2019 Mechmania AI hackathon
- Relevant Coursework: Affective Computing, Algorithms, Artificial Intelligence, Computational Linguistics, Computer Architecture, Corpus Linguistics, Data Structures, Probability and Statistics, Programming Languages and Compilers, Software Design Studio

Southwestern Illinois College May 2018
Associate in Science GPA: 3.87/4.00

- Volunteered as a member of Phi Theta Kappa Honors Society

SKILLS

Languages: C#, C++, CSS, FOMA, HTML, Haskell, JSON, Java, JavaScript, LaTeX, LexC, Python, R, XML
Libraries: Keras, Matplotlib, NLTK, NumPy, OpenCV, Pandas, PyTorch, Scikit, TensorFlow, Weka
Skills: Agile development, Convolutional Neural Network (CNN), Finite State Machines, Git, JUnit, Linux, POS tagging, Parsing, Recurrent Neural Network (RNN), Regex, Robotic Process Automation (RPA), Sentiment Analysis, Seq2Seq, Spintax, Text Analytics, Tokenization, and more

EXPERIENCE

AbbVie Inc. Champaign, IL
Software Engineer Intern April 2019 – August 2019

- Worked with an Agile team of interns and a mentor to automate document processing for clinical drug trials, allowing pharmaceutical researchers to reallocate more than $200,000 in salary hours for doing research, rather than reviewing documents
- Conducted interviews with researchers and business directors at AbbVie HQ to analyze problem in beginning of internship, and to present results of bot at the end in front of a crowd of 50 executives and researchers
- Implemented image recognition, machine learning, and statistical techniques in Python utilizing OpenCV, Matplotlib, NumPy, and other libraries to recognize and parse handwritten text in different formats
- Tested accuracies of various approaches to differentiating between intentional marks and bad scans, eventually deciding on Scipy stats to compare against a blank document copy and employing a histogram to determine statistical significance

Southwestern Illinois College Belleville, IL
Programming and Mathematics Tutor August 2017 – May 2018

- Mentored students from various backgrounds in Java programming fundamentals along with Math courses up to Multivariable Calculus
- Learned and refreshed on concepts on the job regularly in order to handle any question within a timely manner, quickly determining how to solve and explain problems from unfamiliar or rusty concepts while also managing other students
- Received International CRLA Level 1 Tutoring Certification, certifying competency in subject area and interpersonal communication skills

Fresh Pear Design Breese, IL
Lead Web Developer July 2014 – September 2014

- Implemented responsive cross-platform websites in Adobe Dreamweaver using artwork from the design team
- Coordinated other web developers as lead while communicating with the design team to reach customer deadlines

PROJECT HIGHLIGHTS

Sentiment Analyzer April 2020 – May 2020

- Wrote a program in Python to classify text as positive or negative using supervised machine learning and the NLTK library
- Implemented SVM, Logistic Regression, Decision Tree, and unigram classifiers with various text features achieving accuracy up to 89%

Text Leak Mitigation Software October 2019 – April 2020

- Developed a program in Java to generate and index idiomatic permutations of a document through a custom Spintax ruleset, then discover the source of a leaker via semantic distance algorithms, syntactic differences, statistics, and repeated exposure
- Researched and tested effectiveness between various algorithms in literature survey such as Hamming Distance, Levenshtein Detailed Distance, word2vec skip-gram, character n-grams, and more
- Wrote preprint papers and reviewed current literature on paraphrase detection and generation for text (available upon request)

Educational Software May 2017 – July 2017

- Consulted with the SWIC Math Department head to develop Java software for Regional Math Tournaments hosted by SWIC
- Independently planned and accomplished client's design criteria, interpreting non-technical desires into code for a final product
- Regularly gave updates to the client and met self-regulated milestones in order to fulfill client expectations before target deadline

RESEARCH

Solid Spintax Spinner: Method for Generating Permutations of a Spintax
2nd author, Blue paper March 2020

Solid Spintax Standard: Efficient and Scalable Deterministic Method for Specifying Indexable String Permutations
2nd author, Blue paper March 2020

Systems Enabling the Use of Natural Language Processing Methods for Software-Based Leak Detection, Prevention, and Mitigation
2nd author, Proposal paper February 2020