Jacob Fuehne

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EDUCATION

University of Illinois at Urbana-Champaign May 2021

Bachelor of Science in Computer Science and Linguistics GPA: 3.8/4.0

- 1st place in 2019 Mechmania AI hackathon
- Coursework: Algorithms, Artificial Intelligence, Applied Machine Learning, Audio Computing Lab, Computational Linguistics, Computational Morphology, Computer Architecture, Computer Systems, Corpus Linguistics, Data Structures, Statistics, Semantics and Pragmatics, Programming Languages and Compilers

EXPERIENCE

Cognizant Raleigh, NC

SQA Automation Engineer (contractor for Gilead Sciences) June 2021 – Present

- Transitioned **Gilead Sciences** to automated test scripts for their Identity Management app and maintained test user databases using SQL.
- Tested Gilead's cloud infrastructure and Big Data QA projects, including AWS S3 and AWS Redshift data warehouse using SQL queries
- Collaborated with software engineering team as SQA lead to resolve defects and manage SQA resources to meet project timelines.
- Responsible for independently writing test plans, reports, cost savings metrics, and ensuring test requirement coverage during execution.

Solid Security Champaign, IL

NLP researcher October 2019 – April 2020

- Developed a program in Java to generate and index idiomatic permutations of a document through a custom Spintax ruleset, then identify the source of a leaker via semantic distance algorithms, syntactic differences, statistical analysis, 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)

AbbVie Inc. Champaign, IL

Software Engineer Intern April 2019 – August 2019

- Worked with a 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 towards 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 an audience 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 methodologies 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
- Received International CRLA Level 1 Tutoring Certification, certifying competency in subject area and interpersonal communication skills

PROJECT HIGHLIGHTS

Language Learning and Text Analysis app Python

- Analyzing and combining conversation histories in various data formats (XML, JSON, txt) to perform data mining on one's own data
- Visualizing term frequency, LDA topic modelling, and more to assist language learning, as well as novel linguistic analysis

Sentiment Analyzer Python

- Wrote a program in Python to classify text as positive or negative using supervised machine learning and the NLTK library
- Implemented stop word list, Laplace smoothing, and stemming to improve performance of bigram model, with test accuracy of 89%

Educational Software Java

- Consulted with the SWIC Math Department head to develop Java based GUI for Regional Math Tournaments hosted by SWIC
- Independently planned and accomplished client's design criteria, with regular updates to the client and self-regulated milestones

RESEARCH

- **A Review of the Unified Corpus and a Methodology for Improvement on Generalizable Emotion Detection** December 2020
- **Solid Spintax Spinner: Method for Generating Permutations of a Spintax** March 2020
- **Solid Spintax Standard: Efficient and Scalable Deterministic Method for Specifying Indexable String Permutations** March 2020
- **Systems Enabling the Use of Natural Language Processing Methods for Software-Based Leak Detection, Prevention, …** February 2020

SKILLS

Languages: Java, Python, SQL, C++, R, JavaScript, HTML, CSS, C, C#

Software/Frameworks: NumPy, Selenium, Pandas, AWS, Cucumber, Jenkins, Docker, NLTK, Scikit-Learn, OpenCV, Flask, Bash, Git, JUnit