Sandra Nguyen

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EDUCATION

California State University, Fullerton Fullerton, CA
Bachelor of Science in Computer Science Expected Graduation May 2024
3.91 GPA | 4.00 GPA

RELEVANT COURSEWORK

Algorithm Engineering, Introduction to Machine Learning, Intro to Data Sci. & Big Data, Operating System Concepts, Object-Oriented Programming, Data Structures, Statistics Applied to Natural Sciences, Mathematical Structure, Into to Programming

RESEARCH INTERESTS

Artificial Intelligence, Machine Learning, Data Science, Cybersecurity

RESEARCH INTERESTS

Undergraduate Research Opportunity Center (UROC) January 2024 – May 2024

- Highly-competitive semester-long fellowship from the California State University, Fullerton Titan Research program, dedicated to support diverse undergraduate engagement in faculty-guided scholarly research
- Will develop proficiency in machine learning, data science, learning analytics, game development, and conference/publication experience with independent research projects
- Skills: C#, Python, R, Machine Learning, Supervised Learning, Game Development, Unity, Data Science

SoCal Data Science Program June 2023 – August 2023

- Highly-competitive cross-institutional summer fellowship dedicated to recruit, train, and dispatch a diverse workforce of STEM and data science majors
- Developed proficiency in machine learning, statistics, and data science with independent research projects
- Skills: Python, Data Science, Machine Learning, Supervised Learning, Deepnote

ASSURE-US Summer Research Experience May 2022 – July 2022

- Excellent faculty-led summer research program from the California State University, Fullerton College of Engineering & Computer Science, dedicated to give students the opportunity to collaborate with esteemed faculty members
- Developed proficiency in data science and machine learning with independent research projects
- Skills: Python, Data Science, Machine Learning, Supervised Learning, Unsupervised Learning, Jupyter Notebook

PROFESSIONAL EXPERIENCE

Community Tutor & Student Assistant Fullerton, CA
Women in Computer Science & Engineering (WiCSE) August 2022 – Present

- Motivating peers through collaborative instruction in intro to computer science and mathematical structures courses
- Reinforcing efficient programming strategies and study habits to enhance student learning and career success
- Co-organizing weekly virtual & in-person meetings for the WiCSE community

Peer Mentor Fullerton, CA
CIC | PCUBED June 2023 – Present

- Mentoring 100+ students in their respective data science and pairs trading summer research projects
- Guiding four freshmen and transfer students through the semester to foster academic success

LEADERSHIP EXPERIENCE

Campus Director & Associate Program Lead Fullerton, CA
The Percentage Project August 2022 – Present

- Supporting a nationwide team of campus directors, with prior experience as a CD coordinating with six CS & ENGR departments to collect anonymous survey data on student culture, learning environment, sense of belonging, and microaggressions within their CS community–with the aim of data-driven advocacy in a nonprofit space

PROJECTS

Phocrastination: A Game-Based Approach to Assessing and Classifying Academic Procrastination in College Students
Research mentor: Dr. Doina Bein, Location: California State University, Fullerton, CA, University of California, Irvine, CA
Duration: March 2023 – Present
Publication: Poster "Phocrastination: A Game-Based Approach to Assessing and Classifying Academic Procrastination in College Students presented at SCCUR 2023 conference at California State University, Fullerton, November 18th, 2023

- Researched a pervasive learning phenomenon called procrastination which affects 80% of college students with debilitating consequences to one's productivity, mental health, personal development, and overall well-being

- Implemented a rigorous Evidence-Centered Game Design process, developed a fully-functional Unity game in one summer, conducted convenience sampling and a pilot study of 80 participants, and achieved predictive validity with Cross-Validation and Support Vector Machine models

Hippocampal Ensembles Represent Sequential Relationships Among an Extended Sequence of Nonspatial Events
Research mentor: Dr. Babak Shahbaba, Research location: University of California, Irvine, CA
Duration: June 2023 – August 2023
Publication: Poster "Hippocampal Ensembles Represent Sequential Relationships Among an Extended Sequence of Nonspatial Events" presented at Summer Research Symposium, August 10th, 2023

- Researched hippocampal involvement in temporal event organization by analyzing neuronal activity from a rodent-based odor experiment, with potential applicability to human sequential, non-spatial memory studies
- Employed standard statistical tests, Bootstrapping and T-tests, to identify associations between individual neurons and the olfactory sense, and applied a Multinomial logistic regression model to decode probabilities for the neuronal ensemble at distinct theta phases–achieving an impressive predictive accuracy score of 95.52%

Data Science Analysis of Malicious Ads and Threat Detection Automation for Cybersecurity Progress
Research mentor: Dr. Doina Bein, Research location: California State University, Fullerton, CA
Duration: August 2022 – May 2023
Publications: Poster "Data Science Analysis of Malicious Ads and Threat Detection Automation for Cybersecurity Progress" presented at SCCUR 2022 conference at Pepperdine University, November 19th, 2022
S. Nguyen and D. Bein, "Data Science Analysis of Malicious Advertisements and Threat Detection Automation for Cybersecurity Progress," 2023 IEEE 13th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV, USA, 2023, pp. 0695-0704, doi: 10.1109/CCWC57344.2023.10099325.

- A novel approach to automating the analysis of malicious content on the internet to protect users against ad fraud
- Built a web scraper to extract potentially malicious advertisements from popular search engines Google and Yahoo, utilizing BeautifulSoup, a parsing library, based on highly targeted keywords–filtered for high search interest score
- Performed feature engineering and applied both Supervised & Unsupervised ML algorithms, Random Forest and K-means Clustering, to analyze a published and scraped dataset with 651,191 and 8,293 URLs, achieving a high accuracy of 91.4%
- Developed a user-friendly, ML-based web application that provides real-time URL detection and keyword analysis

Data Science Analysis on Real/Fake Job Postings
Research mentor: *Dr. Doina Bein*, Research location: *California State University, Fullerton, CA*
Duration*:* May 2022 – July 2022

- Initiated an end-to-end Scikit-Learn workflow on 18k real/fake job postings from 2020 to predict their legitimacy
- Implemented python packages and techniques Pandas, Matplotlib, Seaborn, Label Encoding & Standardization
- Performed Linear Regression, Random Forest, Decision Tree & K-Nearest Neighbors Classification algorithms, as well as K-Means & Gaussian Mixture Clustering paired with the Elbow Method & Silhouette Score to determine optimal k clusters

HONORS AND AWARDS

UROC Fellowship Award November 2023

- Awarded $5,000 grant to conduct and present research at annual research symposium

Advancing Women in Technology Scholarship March 2023

- Awarded $7,500 grant to further education in the technology field

STEM Advantage May 2023

- Awarded $7,500 grant to attend classes full-time and graduate with less student debt

Dean's Honor List Fall 2021 - Present

- GPA of 3.5 or higher for 12 units of coursework

PUBLICATIONS

S. Nguyen and D. Bein, "Data Science Analysis of Malicious Advertisements and Threat Detection Automation for Cybersecurity Progress," 2023 IEEE 13th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV, USA, 2023, pp. 0695-0704, doi: 10.1109/CCWC57344.2023.10099325.

R. Gudipudi, S. Nguyen, D. Bein, and S. Kurwadkar, "Improving Internet Advertising Using Click-Through Rate Prediction," in Human Factors in Software and Systems Engineering, T. Ahram, Ed., AHFE International, USA, 2023, vol. 94, AHFE Open Access, [Online]. Available: http://doi.org/10.54941/ahfe1003772.

PROFESSIONAL AFFILIATIONS

University Honors Program**,** Women in Computer Science & Engineering (WiCSE), Association for Computing Machinery (ACM), ASSURE-US, CIC|PCUBED, Louis Stokes Alliances for Minority Participation (LSAMP), STEM Advantage, Advancing Women in Technology (AWT)

TECHNICAL SKILLS

- **Languages**: Python, R, C++, C#, SQL, CSS, HTML, NASM Assembly
- **Developer Tools**: Scikit-Learn, Unity, RStudio, Jupyter Notebook, Visual Studio Code, MySQL, Deepnote, Overleaf
- **Technologies:** Linux, GitHub, Git, AWS Lambda, Databricks, Kaggle

REFERENCES

Doina Bein
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