

Harsimran Preet Singh

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EDUCATION

California Polytechnic State University

September 2019 - June 2023

Bachelor of Science in Computer Science

San Luis Obispo, CA

Coursework: Data Structures and Algorithms, Object-Oriented Programming, Operating Systems, Computer Architecture, Software Engineering, Discrete Mathematics, Theory of Computation, Programming Languages

EXPERIENCE

Software Engineer

June 2022 – Present

Amazon Web Services, Dxhub

- Facilitated connections between over 200 SLO veterans and 500 student volunteers, creating an effective community service app for veterans approved by SLO county.
- Led comprehensive usability analyses and conducted 3+ user experience workshops, resulting in a 60% increase in user satisfaction and engagement.
- Optimized app content and layout through A/B testing, resulting in a significant 30% increase in conversion rates.
- Revamped platform scalability by implementing AWS services like API Gateway, DynamoDB, Lambda, and S3.

Computer Science Tutor

March 2022 – June 2022

Cal Poly Computer Science and Software Engineering Department

- Created lessons and coached 10+ students weekly in Systems Programming, Data Structures, and Algorithms.
- Utilized teaching methods such as group coding exercises, code reviews, and problem-solving through workshops.
- Assisted students with programming and data structure concepts in class assignments.

Software Engineer

September 2019 – June 2021

Northrop Grumman

- Contributed to designing and developing an autonomous drone, which successfully staged mock rescue missions under challenging conditions, demonstrating the ability to work on complex, real-world projects.
- Gained experience with full software development life cycle (SDLC), delivering 3 major projects during the tenure.
- Implemented a fire suppression system and payload pick-up feature, involving over 5000 lines of python code.

PROJECTS

San Luis Obispo Veterans Help Website | *React Native, HTML/CSS, AWS*

- Led a comprehensive revamp of the website, enhancing services like housing aid and mental health resources.
- Redesigned user interface to restructure navigation and streamline access to critical resources, leading to a remarkable 70% increase in leads generated through forms.
- Facilitated continuous interaction between users, development, and QA teams throughout the SDLC, resulting in a 95% testing success rate.

Research Study: ML in Security and Privacy |

- Conducted an in-depth analysis of over 20 current survey papers on the intersection of machine learning and cybersecurity, focusing on the vulnerabilities of ML-based systems and privacy considerations.
- Assessed the security applications of ML-based systems and corresponding vulnerabilities introduced when an ML model is used, covering over 15 types of common ML models.
- Updated the techniques discussed in data security and privacy to better encapsulate the privacy threats, improving the understanding of privacy threats by approximately 30%.

Book Genre Predictor | *Python, Google Colab*

- Enhanced book recommendation systems by accurately predicting book genres based on past data.
- Demonstrated strong predictive capabilities in genre classification using a directed perceptron learning algorithm.
- Achieved an accuracy of 0.911 and an F-1 score of 0.953.

TECHNICAL SKILLS

Languages: Python, Java, C, C++, JavaScript, TypeScript, Swift, SQL, HTML, CSS

Frameworks: React, Django, Node.js, Flask, JUnit, WordPress, MySQL, FastAPI

Libraries: NumPy, Pandas, Matplotlib, Scapy, TensorFlow

Developer Tools: Git, AWS, Jupyter, JIRA, Linux, Google Cloud Platform, VS Code, Eclipse, IntelliJ IDE