Archita Singh

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EDUCATION

The University of Texas at Austin, Austin, TX   May 2028
Bachelor of Science in Computer Science and Mathematics, **Turing Scholar Honors Program**   GPA: 4.0
Relevant Coursework: Honors Data Structures, Honors Discrete Math, Probability, Linear Algebra, Calculus III, Honors Computer Architecture (Planned 2025), Graduate Prediction Mechanisms in Computer Architecture (Planned 2025)

EXPERIENCE

The University of Texas at Austin   Spring 2025
- Incoming Quantum Computing Research Intern

Jane Street Academy for Math and Programming   June 2024 - Aug 2024
Software Engineering Fellow
- 1 of 78 out of 5000+ selected nationally for five-week residential/educational program taught by U.S. Math Team coaches and IMO medalists
- Designed, implemented, and presented Python artificial intelligence agents for mathematically-focused games, such as Wordle and Anagrams, with a focus on rigorous testing and creative problem solving
- Completed coursework in number theory, combinatorics, and computer science, spanning topics such as probability, statistics, object-oriented design, algorithms, and game theory

MD Anderson Cancer Center   Aug 2021 - Aug 2023
Data Science & ML Research Intern
- Processed 50+ records of demographic and health data using MySQL to develop clustering models in Python (SciKit-Learn).
- Applied Elbow Method, K-means clustering, and PCA, improving feature isolation accuracy by 25% in COVID-19 risk analysis. Presented research at Rice University's Ken Kennedy AI and Data Science Conference.

The University of Houston   Aug 2022 - Aug 2023
Academic Research Intern
- Utilized automated video scanning, indexing, captioning, and search to make lecture videos interactive learning resources.
- Used Pandas, Scikit-Learn, Natural Language Processing, and Google Tesseract to develop keyword identification algorithms and metrics to evaluate performance against groundtruth keywords

PROJECTS

Jane Street Electronic Trading Competition Bot
- Developed quantitative modeling and trading algorithms on electronically simulated stock exchanges
- Traded on simulated market, produced the 3rd highest PNL over 6 hours of market making

CamelUp
- Developed backend and unit tests for a digital version of CamelUp with a focus on object-oriented design
- Developed an artificial intelligence agent to mathematically optimize bets based on the current board state.

Wordle Solver
- Programmed a Wordle solver averaging 3.5 guesses with a 3% loss rate by predicting which word from the remaining possible guesses would yield the max entropy for each possible letter pattern

SKILLS

Programming: Java, Python, C/C++, JavaScript, React, Swift, Objective-C, SQL, NoSQL, R
Machine Learning Libraries: Python: SciKit-Learn, PyTorch, TensorFlow

LEADERSHIP & COMMUNITY INVOLVEMENT

Breaking Barriers with Code: Authored a two part published textbook series designed to provide Title 1 students with a comprehensive resource to succeed in competitive programming
Codenovate: State chapter lead for 501(c)3 organization. Led Python and app development workshops
UT Austin Directed Reading Program, UT Austin WiCS, Turing Scholars Student Association

HONORS AND AWARDS

DECA International Career Development Conference (ICDC) top 10 finalist in Marketing Communications Series
National Center for Women & Information Technology (NCWIT) Affiliate Award Winner
Valedictorian and National Merit Finalist ($2500 Scholarship recipient): Cypress Falls High School