

# Kushagra Tandon

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## EDUCATION

### Bachelor of Science in Computer Science

Arizona State University

May 2026

Tempe, Arizona

**Relevant Coursework:** Data Structures & Algorithms, Operating Systems, Distributed Software Development, Computer Network Security, Human-Computer Interaction, Applied Linear Algebra, Probability & Statistics

## SKILLS

**Languages:** Python, C/C++, Java, JavaScript, SQL, Rust

**Machine Learning & Data:** TensorFlow, XGBoost, Scikit-learn, Pandas, NumPy, NLP, Time-Series Analysis, Model Evaluation & Backtesting

**Web & Application Development:** React.js, Flask, Django, Node.js, TypeScript, REST APIs, SwiftUI

**Databases & Cloud:** MongoDB, MySQL, AWS, Firebase

**Tools & Systems:** Git, Linux, CI/CD, Docker, OpenCV, Agile/Scrum

## PROJECTS

### Peer-to-Peer Rental App | *SwiftUI, Firebase, MVVM*

- Built a mobile app enabling users to list, book, and manage rental equipment using Firebase (Auth, Firestore, Storage).
- Designed scalable MVVM architecture with reactive UI via `@StateObject`, `@ObservedObject`, and `@Published`.
- Integrated real-time booking, chat, and listing features with Firestore-backed data synchronization.

### Sentiment Analysis Bot (News-driven financial signal generation and return forecasting) | *Python, TensorFlow, NLP, Scikit-learn*

- Achieved ~19% annualized return in backtests by building a news-driven financial forecasting and trading strategy
- Reduced latency ~35 % with a multi-source RSS pipeline fetching 1K+ headlines/day.
- Improved signal accuracy ~25 % using TextBlob sentiment scoring and rolling-window smoothing.
- Produced full performance metrics in <2 s/test via a vectorized Pandas/NumPy backtesting engine.

### Credit Risk Prediction (Credit risk modeling for financial decision-making) | *Python, Scikit-learn, React, Flask*

- Developed a web app that predicts customer credit risk to support financial risk assessment using a Random Forest classifier
- Designed a clean **Flask + React** stack for live model inference and result visualization.
- Set up CI/CD pipelines for smooth deployment and high availability on GitHub Pages and Render.

### PDF to Lecture | *Python, NLP, Flask, React.js*

- Built a tool to convert PDFs into audio lectures using NLP for text extraction and synthesis.
- Automated a 6-step manual process to reduce content creation time and effort.
- Integrated real-time feedback via React frontend for a better user experience.
- Handled large files (up to 500MB) efficiently for broader usability.

### EPL Betting Model — Model vs Market Analysis | *Python, XGBoost, Scikit-learn, Pandas, Streamlit*

- Built a calibrated XGBoost model for EPL outcomes, achieving ROC-AUC ≈ 0.79 on 570 out-of-sample matches.
- Compared model vs bookmaker-implied probabilities using odds-derived features and ELO ratings to identify market edges.
- Backtested fixed-stake and Kelly strategies across 100+ candidate bets, analyzing ROI and drawdowns.
- Deployed an interactive Streamlit dashboard to explore predictions, edges, and bankroll simulations.

## EXPERIENCE

### Research Aide

ASU School Of Earth & Space Exploration

October 2023 - May 2025

Tempe, Arizona

- Developing virtual field experience modules for the NSF-funded WORM Portal project, enhancing user engagement.
- Collaborating with Dr. Reano and an interdisciplinary team to ensure scientific accuracy and cultural relevance in immersive learning experiences.
- Integrating Indigenous knowledge frameworks into educational content to create inclusive and impactful materials.

### Software Development Intern

Hindustan Aeronautics Limited

June 2023 - August 2023

India

- Developed and optimized internal aerospace monitoring dashboards using HTML, CSS, JavaScript, and Java Servlets, improving user experience and load performance.
- Designed modular web components to simplify code maintenance and enable reuse across multiple internal tools.
- Worked with cross-functional engineering teams to ensure accurate real-time telemetry data, enhancing reliability of critical aircraft monitoring systems.

## LEADERSHIP EXPERIENCE

### Secretary

TEDx Club, Arizona State University

September 2023 - Present

Tempe, Arizona

- Managed 30+ TEDx event meetings, ensuring organizational efficiency and alignment of team goals.
- Strengthened team collaboration across 15+ members, facilitating strategic planning for high-impact events.