Kushagra Tandon

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EDUCATION

Bachelor of Science in Computer Science **May 2026**
Arizona State University **Tempe, Arizona**
Relevant Coursework: Data Structures & Algorithms, Operating Systems,
Distributed Software Development, Computer Network Security, Statistical Machine Learning,
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, NLP, Pandas, Quantitative Research link*
- Built an end-to-end news-driven trading research pipeline using free RSS data and NLP sentiment analysis
- Ingested and deduplicated **1,000+ daily financial headlines** from multiple sources to reduce noise.
- Converted aggregated sentiment into **systematic Buy/Sell signals using rolling-window smoothing**
- Backtested strategy with vectorized **Pandas/NumPy engine and evaluated return, CAGR, Sharpe, and drawdown**

Credit Risk Prediction (Credit risk modeling for financial decision-making) | *Python, Flask, React, REST APIs link*
- **Designed** an end-to-end ML inference system **to predict credit default risk** via a Flask API consumed by a React client.
- **Constructed numerical feature vectors to represent credit behavior** from repayment status, billing cycles, and payment amounts..
- **Returned calibrated probability scores to enable risk stratification** using predefined severity thresholds.

PDF to Lecture | *Python, NLP, Flask, React.js*
- Built an **AI-driven system** that transforms PDFs into narrated lecture presentations with automated slide generation.
- Reduced content creation effort by **70%+** by automating a 6-step manual workflow.
- Processed **large-scale PDFs (up to 500MB)** with optimized backend pipelines.
- Delivered a **React-based real-time UI** for seamless user interaction and feedback.

EPL Betting Model — Model vs Market Analysis | *Python, XGBoost, Scikit-learn, Pandas, Streamlit link*
- 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 **October 2023 - May 2025**
ASU School Of Earth & Space Exploration **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 **June 2023 - August 2023**
Hindustan Aeronautics Limited **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 **September 2023 - Present**
TEDx Club, Arizona State University **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.