Alexis Adzich

Los Angeles, CA 90024 • aadzich@ucla.edu • (714) 656 - 7856 • www.linkedin.com/in/alexisadzich/

EDUCATION:

B.S. in Applied Mathematics (Specialization in Computing) *Expected Jun 2025*
B.S. in Statistics and Data Science
University of California, Los Angeles (UCLA)
- GPA: 3.9/4.0

PROJECTS:

Computer Vision Automated Tennis Tagger *Jun 2024 – present*
- Adapted open-source object detection models designed for official ATP matches to UCLA tennis match videos, creating frame-by-frame tracking data for player and ball movement.
- Developed Python functions for perspective warping and smoothing ball paths to output automated visual analytics utilizing deep learning networks

Genre Classification with FNNs *Jan 2024 – Mar 2024*
- Built deep learning model to classify 100+ music genres using feedforward neural networks
- Analyzed attributes of 110,000+ songs and evaluated against alternative approaches (KNN, GMM, CNNs)
- Tuned hyperparameters and preprocessing steps to optimize interpretability and precision accuracy

SIR Rumor Spreading Model *Sep 2023 – Dec 2023*
- Proposed an improved hybrid rumor spreading model combining previous MK, DK rumor models, and the SIR epidemic model with a small team
- Modeled movement between rumor states, such as "spreader" and "stifler," with differential equations and stochastic simulations in Python to evaluate a steady state solution of subpopulations

Classifying Delinquent HELOC Mortgage Loans *Apr 2023 - Jun 2023*
- Predicted borrower delinquency behavior based on 90,000+ HELOC mortgage loans and features
- Created SQL database to import data with adaptable code for variable loan timelines and clear user interface
- Utilized resampling methods to remit unbalanced classes and best fit the Keras models with feature training

Analysis of US House of Representatives Apportionment Methods *Sep 2020 - May 2021*
- Researched Constitutional laws and congressional apportionment history for proposed/implemented mathematical apportionment methods
- Computed sample population examples and explored Apportionment Impossibility paradox and Gödel's Incompleteness Theorems for axiom-based systems
- Accessed 2010 census data to analyze historical mathematical apportionment methods and their impact on the narrow 2000 election

ASSOCIATIONS AND LEADERSHIP:

UCLA Tennis Analytics Consulting – *Data Analyst* *Apr 2023 – present*
- Working alongside the UCLA Men's and Women's D1 team to provide individualized data analytics and interactive dashboards to the coaches and players, suggesting strategic play adjustments
- Developed computer vision software to analyze ball movement from tennis match film, currently leading a team to transform compiled data into insightful visuals and statistical conclusions

Bruin Sports Analytics - *Researcher* *Oct 2023 - present*
- Composing long-form statistical analyses on trending sports issues in a small team of students with professor and graduate student support to publish final paper
- Current Project: Exploring momentum in basketball games and evaluating their influence on scoring "runs" or final outcomes by modeling plays as events in Markov chains and assessing transition probabilities

DataResolutions – *Research Team* *Oct 2023 - present*

- Investigating everyday applications of data science and exploring ML regression model evaluations
- Previous Project: Evaluating "funniness" of Reddit jokes with CNN on tokenized data and up/downvote scoring system to explore humor through the eyes of a machine
- Current Project: Competing in a Kaggle competition, exploring improvements and researching novel approaches with Gemma/DeepSeek LLM models to solve AI Math Olympiad problems

Bruin Capital Management – *Quantitative Analyst* *Sep 2023 – Jun 2024*

- Pitched Healthcare ETF portfolio optimizing efficient frontier on mean-variance analysis and financial stats.
- Hosted and composed an interactive workshop for 20+ members on NLP for financial statements to evaluate company uncertainty and volatility
- Algorithmic Insights: Team leveraging ML/NLP to create grade-rating model assessing stock strength

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PROFESSIONAL EXPERIENCE:

Peer Learning Facilitator *Sep 2023 - present*

Office of Academic Excellence Peer Learning, UCLA

- Lead interactive weekly sessions, specializing in math/statistics courses, facilitating UCLA student athletes to academic success and establishing self-sufficient learning strategies
- Prepare 3-4 weekly unique lesson plans with original exercises and presentations condensing key topics
- Foster collaboration and active learning amongst students, and frequently seeking feedback to improve sessions and adapt to students' individualized learning styles

Accounts Receivable Intern *Oct 2019 - Sep 2023*

WhenToWork, Inc.

- Processed and deposited over 3000 subscription checks, recording deposit slips and inputting payment info
- Analyzed and categorized 10,000+ user data entries, such as company industry and shift titles, to pinpoint major customer bases and influence more intuitive programmed autofill and software updates

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TECHNICAL SKILLS:

Computer Languages: Python, R, MATLAB, SQL, C++
Other Software/Tools: NumPy, Tableau, Scikit-Learn, Pandas, Matplotlib, Keras, PyTorch, Microsoft 365

REFERENCES:

Dr. Casey Johnson, Assist. Adjunct Professor
University of California, Los Angeles
casey@math.ucla.edu

Dr. Nicolas Christou, Sr. Continuing Lecturer
University of California, Los Angeles
nchristo@stat.ucla.edu

Viktorija Lejko-Lacan, Lecturer
University of California, Los Angeles
lacan@humnet.ucla.edu