GABRIEL CHA

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EDUCATION

University of California - San Diego   **September 2021 - March 2025**
Bachelor's, Data Science   *GPA: 3.75*
- Coursework: Linear Algebra (A), Calculus (A), Statical Methods (A), Probabilistic Modeling and ML (A-)
- Awards: Provost Honors, Halicioglu Data Science Institute Undergraduate Research Scholarship ($6500)

PROFESSIONAL EXPERIENCE

University of California - San Diego   **La Jolla, CA, USA**
Research Assistant   *October 2024 - Present*
- Developing novel tools in DSTL Lab, advised by Teaching Prof. Sam Lau, the creator of the popular educational tool Pandas Tutor, used by over 30,000 people, to enhance teaching and learning in data science.
- Currently working on ContentGen, a JupyterLab extension designed for instructors to streamline content creation for lecture.
- Developing an interactive chatbot panel within ContentGen to generate questions dynamically based on notebook content, making lectures more engaging and interactive for students.

Southern California Edison   **Rosemead, CA, USA**
Data Analytics & Data Science Intern   *June 2024 - September 2024*
- Built a Python anomaly detection system to flag incorrect energy generation after sunset in over 1 million rows of solar data.
- Automated data inquiries using Python, processing over 1TB of Excel data to extract required information efficiently.
- Developed a user-friendly system on top of automated data retrieval, enabling non-technical users to access data and cutting retrieval time from half a week to 10 minutes (a 99.77% reduction in manual effort).

University of California - San Diego   **San Diego, CA, USA**
Instructional Assistant   *March 2022 - Present*
- Taught algorithms, statistics, and machine learning in Python to over 1,200 students across 8 quarters, serving as an instructional assistant for multiple courses, including DSC 10, DSC 80, and DSC 106.
- Held 180+ office hours while consistently achieving 100% recommendation ratings in student evaluations year over year.
- Handpicked by professors to design 2 new programming assignments from scratch, including a loan analysis using statistical tests and a bus route visualization using graph algorithms.

Halicioglu Data Science Institute   **San Diego, CA, USA**
Undergraduate Research Scholarship Awardee   *September 2023 - June 2024*
- Led the development of a Speech Emotion Recognition system, collaborating with UCSD faculty Justin Eldridge.
- Trained and optimized 4 unique models (CNN, SVM, Random Forest, Vision Transformer) on 12,000 audio clips.
- Conducted research and experimentation to refine model performance and align with state-of-the-art practices in the field.

Engineers for Exploration   **San Diego, CA, USA**
Acoustic Species Identification Team   *June 2023 - September 2023*
- Contributed as an active club member to the Acoustic Species Identification team, improving bird species classification accuracy by 2% through novel feature engineering techniques, including spectrogram analysis.
- Enhanced dataset quality by 3% from removing corrupted audio recordings, ensuring a reliable and robust training dataset.

PROJECTS

CoDebug
- Published a Python library to improve the debugging experience for developers in Jupyter Lab by using linecache to read error messages and integrating with OpenAI API to provide troubleshooting suggestions.

Modeling in Apache Spark
- Processed 25 GB of Amazon user reviews using Apache Spark, executing joins and aggs. to train scalable Word2Vec model.

SKILLS

Programming Language: Python, SQL, Java, JavaScript, TypeScript, HTML/CSS, Tableau, Arduino