Ryan Ding

(248) 904-9758 | dingryan2@gmail.com | linkedin.com/in/ryand26 | github.com/ryanDing26

EXPERIENCE

Gilson-Yu Lab, UC San Diego *Aug. 2022 - Present*
Undergraduate Researcher

- Worked alongside Dr. Michael Gilson and Dr. Rose Yu to develop a **latent diffusion model** in **PyTorch** conditioned on protein binding sites to generate ligand for targeted drug design
- Incorporated experimental data into the lab's existing molecular generative model to refine binding affinity calculations and optimize predictions for drug-target interactions

DIMACS Research Experience for Undergraduates, Rutgers University *May 2024 - July 2024*
Undergraduate Researcher

- Conducted research under Dr. Wilma Olson to investigate sequence-dependency in loop-like DNA structures, enhancing the understanding on **genomic folding and function** in a computational context
- Integrated findings into the **emDNA** software in **C++** to expand its capabilities in modeling DNA behavior with regards to elastic energies and sequence information

Computer Science and Engineering, UC San Diego *Apr. 2024 - Jun. 2024*
Undergraduate Tutor

- Provided dedicated support to **450+ undergraduate students** enrolled in **CSE 100R: Advanced Data Structures** via lab hours to enhance student understanding of concepts such as trees, graphs, and hashing
- Assisted in testing and validating weekly programming assignments and examinations, ensuring consistency within the automatic grading system and alignment of content to learning objectives

Summer Program for Incoming Students, UC San Diego *Aug. 2023 - Sep. 2023*
Student Mentor

- Guided **50+ incoming students** in developing proficiency in Python programming concepts via various lab assignments
- Mentored students through their capstone projects in machine learning, providing technical expertise in project development through the use of libraries such as **NLTK**, **pandas**, and **XGBoost**

PROJECTS

Tech Company Layoff Predictor | *Python*, *Keras*, *scikit-Learn*, *NumPy*, *pandas*

- Implemented various machine learning models in **Keras** and **scikit-learn** in order to predict the projected number of layoffs at major tech companies in the future
- Achieved a testing MSE of 108.01 using a fine-tuned Random Forest Regressor to improve predictive capabilities

Housing Price Predictor | *Jupyter Notebook*, *scikit-Learn*, *Matplotlib*, *NumPy*, *Pandas*

- Leveraged various regressive models in **scikit-learn** to predict median home costs using preprocessed data from Realtor.com
- Plotted results in **Matplotlib** to visualize predictions five years into the future

EDUCATION

University of California San Diego, La Jolla, CA *Expected Jun. 2026*
B.S. Computer Science *GPA: 3.69/4.00*

- Awards: Regents Scholarship
- Relevant Courses: Machine Learning Algorithms, Reinforcement Learning, Statistics, Linear Algebra, Advanced Data Structures, Software Engineering, Database Systems, Algorithmic Design, Systems Programming, Programming Contests

TECHNICAL SKILLS

Languages: Python, Java, C++, HTML, CSS, JavaScript, SQL, C
Libraries: PyTorch, scikit-learn, Keras, NumPy, pandas, Matplotlib, XGBoost, NLTK, Flask, Tkinter, RDKit
Tools and Technologies: Git, JupyterLab, Jupyter Notebook, Jest, Node.js, Visual Studio Code