Rolan Guang

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Education

University of California Santa Barbara Santa Barbara, CA
Bachelor of Science in Computer Science, Minor in Physics; GPA: 4.0/4.0, Regents Scholar *Sept. 2022 – June 2025*
Relevant Coursework *Data Structures and Algorithms, Advanced C++, Discrete Math, Probability and Statistics*

Experience

Research Intern June 2021 – October 2021
San Diego Supercomputer Center *San Diego, CA*

- Cleaned and analyzed Sleep EEG and MEG data using R
- Created three Spatiotemporal Isosurfaces visualizations using MATLAB, VizIT, and GitHub
- Analyzed visualizations and presented findings to center's researchers

Research Intern June 2020 – October 2020
Center for Human Dynamics, San Diego State University *San Diego, CA*

- Compiled San Diego COVID Data using Excel, Pandas, and Python
- Created multi-linear regression model in R to analyze correlation between ethnicity, income, population density, and COVID cases
- Assisted in data preparation and offered insights for article titled, "COVID-19 Impact Disparities among Ethnicity Groups in San Diego County."
- Wrote 15-page paper and presented findings to center's researchers

Projects

Linear Function Approximation solution to the Travelling Salesman Problem |
Python, Numpy, Jupyter Notebooks, Pandas June 2021 – August 2021

- Created custom linear function approximation reinforcement learning model with an actor-critic architecture to solve the classic NP-hard Traveling Salesman Problem
- Independently wrote and published research paper in the Journal of Student Research
- Received Distinguished Paper Award from Summer STEM Institute (top 10 papers out of over 100)

Tensorflow Ring Detection | *Python, Tensorflow lite, Git* September 2020 – March 2021

- Designed custom neural network and created Tensorflow lite object detection model for detecting number of rings in varying conditions
- Analyzed video data and performed data augmentation for over 99% accuracy
- Modified model version and adjusted size to be compatible with Robot Controller

Sci-kit Learn Instrument Classification | *Python, Sci-kit Learn, Numpy* February 2020 – May 2020

- Created Sci-kit learn model to classify which instruments are playing in a .wav file
- Performed fourier transform on audio
- Adjusted for overfitting and achieved over 99% accuracy on evaluation data

Django Twitter | *Python, Django, HTML/CSS, Bootstrap, Git* February 2021 – May 2021

- Constructed twitter-like website with basic features and Python-backend
- Created basic Twitter-like UI
- Added interactive features such as commenting, tweeting, and liking posts across multiple users

Technical Skills

Languages: Python, C++, Javascript, HTML/CSS, MATLAB, R
Frameworks: Tensorflow, Sci-kit Learn, OpenCV, Django, WordPress
Developer Tools: Git, Visual Studio, Valgrind
Libraries: Pandas, NumPy, Matplotlib, Scipy