Sujen Kancherla

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Education

- **University of California San Diego** (Sep 2021 – June 2024): Bachelor of **Data Science** — **GPA: 3.87**.
- **University of California San Diego** (June 2024 – June 2025): Masters in **Machine Learning and Data Science** - Electrical and Computer Engineering — **GPA: 4.0**

Work Experience

UCSD ARC Lab **July 2024 – *current***

Graduate Student Researcher

- Working with Nvidia Isaac Sim, in python
- Automating robotic surgery through Reinforcement Learning in simulation

UCSD McAuley Lab **Oct 2023 – April 2024**

Student Research Assistant *Remote*

- Co-author of paper: *Avoiding Decision Fatigue with AI-Assisted Decision-Making*
- Introduced Decision-based reinforcement learning on sequential data for recommender systems. Used a **GPT-2 transformer** with **Reinforcement Agent**
- Performed Exploratory Data Analysis on sequential decision making data using **pandas** and **seaborn**
- Compared syntehtic data with real human data in order to validate data before training model on it. Used **Kolmogorov-Smirnov Two-Sample Test** and visaul inspection of distributions
- Created baseline model using **Deep-Q learning**, designed the reward strategy, environment and loss function to achieve an accuracy of **80%**

Omnisync INC **Jan 2023 – June 2023**

Data Science Intern *Part-time Remote*

- leveraged **REST APIs** to extract data into python scripts, employing **AWS** distributed systems (ec2) to significantly reduce processing time by **34%**
- Performed data wrangling to clean and format data, created schemas and relationships in data to correctly store in both **mySQL** and **weaviate** databases
- Used pretrained Sentence Transformer model and finetuned it using **PyTorch** to implement a semnantic search, using vector embeddings stored in the databases. The backend app query search using semantics increased user accessibility and decreased **60%** of average user time on the search system

Intel **June 2022 – Sep 2022**

Data Engineering Intern *Full-Time Hybrid*

- Used shell scripting in **bash** to add and change legacy scripts that performed graphics benchmarking tests and monitoring graphics card temperature and other metrics
- Developped python package to automate the benchmarking and data generation of graphics metrics during a variety of **KPIs**
- Used **xlsxwriter** to perform data analysis that was presented to all **200** members in our graphics department as a part of our power and performance testing

Projects

Chess and Tic Tac Toe AI | *Source Code* **Python | PyGame | Graph Theory**

- Represented game states in Tic Tac Toe and Chess as a **n-ary tree** data structure.
- Implemented a **Depth-limited minimax** algorithm to effectively search for an optimal move at the current state, offering various skill levels of AI
- Created an interactive UI for user to play the games, using **PyGame**

Image Resolution Enhancement | *Source Code* **Python | PyTorch | GAN | Convolution**

- Created **ESRGAN** architecture in PyTorch using the research paper
- Collected and preprocessed image data from div2k dataset for lower and corresponding higher resolution target images.
- Used discriminative and generative **loss functions** to maximize the quality of the output image
- Tuned hyperparameters iteratively with graphing and logging over validation data.
- Created **API** using flask to represent **ONNX** model for faster inference time.

Publications

- **Avoiding Decision Fatigue with AI-Assisted Decision-Making**
  Co-author. *Proceedings of the ACM on Human-Computer Interaction*, 2024.
  https://dl.acm.org/doi/10.1145/3627043.3659569.

Technical Skills

Python, R, SQL, Java, Node.js, HTML, CSS, JavaScript, Linux Bash, Regression, Decision Trees, SVM, Neural Networks, Ensemble Methods, k-NN, Naive Bayes, Decision Forests, Scikit-learn, CNNs, RNNs, TensorFlow, Keras, PyTorch, Hypothesis Testing, Probability, Data Mining, Statistical Testing, Regression Analysis, Tableau, Matplotlib, Seaborn, ggplot2, D3.js, Spark, Dask, MySQL, PostgreSQL, Git, Jupyter Notebook, Visual Studio Code, Azure, AWS Lambda, ECR, EC2