Ritik Raina

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EDUCATION

UC SAN DIEGO
B.S. in Cognitive Science:
Machine Learning and
Neural Computation
Spring 2022 | San Diego, CA

LINKS

Github:// **rainarit**
LinkedIn:// **ritikraina**
Portfolio:// **ritik.xyz**

COURSEWORK

GRADUATE
Neural Networks & Pattern Recognition

UNDERGRADUATE
Artificial Intelligence Algorithms
Machine Learning
Computer Vision
Advanced Data Structures
Design and Analysis of Algorithms
Statistical Methods
Modeling and Data Analysis
Computer Organization
Object-Oriented Programming
Statistical Analysis
Unix Tools and Scripting

SKILLS

LANGUAGES
Python • Java • C++ • Swift
MATLAB • LaTeX • SQL
JavaScript • Assembly • Bash

FRAMEWORKS
CUDA • Tensorflow • PyTorch
MXNet • Scikit-Learn • SciPy
OpenCV • OpenGL • Pandas
XGBoost • Vim • Git • MongoDB

EXPERIENCE

University of Edinburgh | Summer Research Intern
April 2021 – Present | Edinburgh, United Kingdom
- Working with **Dr. Stefano Albrecht** at the Autonomous Agents Research Group on multi-agent reinforcement learning.
- Currently researching the differences in average reward/discounted returns in continuous MARL algorithms.

Massachusetts Institute of Technology | Visiting Scholar
February 2021 – Present | Cambridge, MA

- Working with **Shuang Li** and **Dr. Tianmin Shu** on robotic simulation and model-based reinforcement learning.
- Developed CompCost, a continuous gym environment which employed 3D physics using PyBullet.
- Benchmarked environment tasks on MBRL algorithms - MBPO and PETS.

IBM Research | Undergraduate Researcher - Machine Learning
July 2020 - Present | San Diego, CA
- Worked with the Artificial Intelligence for Healthy Living (AIHL) team to make microbial ontology classification scale efficiently.
- Developing CostaClassifier, a Hybrid **BioBERT-RF** Model that predicts hierarchical ontologies using data corresponding to both metagenomic and metadata profiles.
- Finetuned BioBERT for biomedical text mining tasks under the metagenomics profiles.

University of California - San Diego | Research Assistant
June 2020 – Present | San Diego, CA
- Furthering the development of **V1Net**, a novel convolutional-recurrent network that incorporates neurally inspired recurrent horizontal and feedback connections into deep convolutional networks that are traditionally feedforward.
- This research is supported by the Sony Research Award (2020-2021) with Sony Group Corporation RD Center.

STAR Capital | Research Intern
July 2019 – September 2019 | Jakarta, Indonesia
- Worked with the Data Science team to research and develop a deep learning based system for long-term face tracking from propitiatory databases.
- Applied a **Cascade-CNN** model with the utilization of a **VGG16 network** for face detection/verification.
- Deployed further improvements such as applying a multi-patch tracking for tracking faces in consequent frames.

ACHIEVEMENTS

2021	Invited Speaker	Queen Mary University of London
2019	Provost Honors	UC San Diego

PROJECTS

3D Point Cloud Classification using PointNet
- Developed a MLP network for 3D object classification from point clouds in **Python**, **PyTorch**, **C++**, **CUDA**.
- Implemented a K-means pooling layer and a graph convolution operation on T-net classification