Stephen Jarrell

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PERSONAL SUMMARY

I am a Machine Learning Software Engineer Intern recently admitted to the MS in CS program at UCSD, with applicable experience in deep learning, computer vision, supervised learning and reinforcement learning. I have extensive experience prototyping AI algorithms quickly and evaluating research papers to keep our projects and methods up to date and of the highest standard. I am looking for an opportunity to supplement my current experience in Computer Vision with real-world robotics applications. My passion for machine learning fuels my current pursuit of a Master's Degree in Computer Science at UCSD, with a specialization in Computer Vision.

EDUCATION

University of California, San Diego (UCSD) **Sept. 2017 – June, 2021**
BS in Cognitive Science specializing in Machine Learning & Neural Computation *San Diego, CA*

University of California, San Diego (UCSD) **Sept. 2021 – June, 2023**
MS in Computer Science specializing in Computer Vision *San Diego, CA*

WORK EXPERIENCE

San Diego Supercomputer Center **Nov. 2020– Present**
Machine Learning Software Engineer Intern *San Diego, CA*

- Developed state-of-the-art Computer Vision models on a cluster for object detection and segmentation, such as Faster R-CNN and Mask R-CNN, using PyTorch and Python.
- Engineered the Mask R-CNN (F1-Score of 0.833), which the WIFIRE Lab will deploy at high-altitude weather stations across California, to automatically detect wildfires swiftly upon ignition and relay those detections to local Fire Departments
- Automated image preprocessing for training and performance evaluation of the model, frame-by-frame, for hundreds of videos
- Coordinated amongst a global team of Deep Learning Researchers to program state of the art methods for proprietary visual data

Computational Neural Data & Dynamics Lab **Dec. 2019– Mar. 2020**
Undergraduate Researcher *San Diego, CA*

- Aided principal researchers' mission to create the first taxonomy of every cell in the mammalian brain as part of Obama's BRAIN Initiative by employing unsupervised machine learning methods of UMAP and hierarchical clustering in Python.
- Built pipelines in a Linux environment to efficiently process high-dimensionality genomic and epigenomic data for machine learning

Axos Bank **June 2019 – Sept. 2019**
Omnichannel Data Analyst Intern *San Diego, CA*

- Improved customers' average time on call by 32% and abandonment rate by 26% by programming Python scripts to identify bugs and fix the telecommunications system
- Innovated a new lead strategy and hiring plan for Home Mortgage Lending based upon multivariate regression and hypothesis testing

SKILLS

- **Programming Languages:** Fluent in Python, C, C++
- **Deep Learning Frameworks:** TensorFlow and PyTorch
- **Mathematics of Machine Learning:** Vector Calculus, Linear Algebra, Probability, Statistics
- **Machine Learning Domains:** Deep Learning, Deep RL and Reinforcement Learning, Supervised Learning, Unsupervised Learning
- **Environments:** Linux, UNIX, Kubernetes, Git/Github Version Control
- **Relevant Python Libraries**: NumPy, Pandas, Scikit-learn, SciPy, Matplotlib, OpenCV, statsmodels, requests

PROJECTS (Portfolio @ http://stephenjarrell19.github.io/)

Deep Dream in TensorFlow

- Explored the "black box" of Convolutional Neural Networks by maximally activating model layers with Gradient Ascent in order to visualize the features of each concatenation layer of ResNet101 and InceptionV3, state-of-the-art image recognition models

Gesture Recognition via a Convolutional Neural Network with TensorFlow

- Developed a CNN that detects hand postures/gesture from an OpenCV video input stream using the TensorFlow Sequential API and the NUS-II Hand Posture dataset, a diverse dataset in skin pigment, lighting conditions, and background scenery.