

Anand Jain

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EDUCATION	University of Chicago <i>B.S.</i> , Computer Science. Santa Clara High School	Expected Jun 2021 2017
COURSES	●Abstract Linear Algebra ●Algorithms ●Computer Systems ●Discrete Math ●Electronics ●Inventing Interactive Devices ●Mathematical Logic ●Molecular Engineering ●Quantum Computation	
SKILLS	Languages: Python, Julia, Go, Bash, C/C++, SQL Packages: PyTorch, Gym, TensorFlow, Scikit-Learn, Pandas, Flask Spoken: Fluent English. Classroom Hindi, Spanish, and Mandarin	
EXPERIENCE	Fermilab - LSST Machine Learning Intern ●Researched the applications of neural differential equations in astronomy for the Large Synoptic Survey Telescope (LSST) ●Used the PLAsTiCC Astronomical Kaggle dataset to train a neural network to approximate the differential equation of different astronomical objects' light curves (brightness over time) ●Presented poster of my work on Neural-ODEs at 2019 LSST Conference in Arizona ●Worked with peers and mentors to create a high level API for fast prototyping and ensemble training of neural networks for astronomy datasets, primarily in PyTorch <ul style="list-style-type: none">● Tools: TorchDiffEq, DifferentialEquations.jl, PyTorch, TensorFlow, Matplotlib, Astropy, Python, Julia● Link : github.com/deepskies/cosmoNODE and /dsutils	Jun - Aug 2019
PROJECTS	codebyhand: applying handwriting recognition ●Goal: Use handwriting in IDE and match with code suggestions ●Trained convolutional net on Extended MNIST (EMNIST) dataset ●Wrote 'paint' program that live infers character after each stroke ●Saves new labeled data to disk in Pytorch ImageFolder format for retraining ●Todo: character bounding box detection and inference using stroke direction and order <ul style="list-style-type: none">● Tools: pytorch, torchvision, torchtext, tkinter● Link : github.com/anandijain/codebyhand sippyart: variational-autoencoders for music generation ●Preface: I've been making music on my computer for a few years and have uploaded a few hundred tracks by chronology ●Goal: Learn generative models like GANs and autoencoders ●Built tool to recreate images and 1-2 second sections of audio using convolutional variational autoencoders ●Model learns to recreate melody better than rhythm, examples in README ●Todo: Make sequential embedding from one audio segment to the next using LSTM with the encoded <ul style="list-style-type: none">● Tools: pytorch, torchaudio, torchvision● Link : github.com/anandijain/sippyart	
ACTIVITIES	UCQuantum (.org) - Founder/President ●Undergraduate Student Organization of ~50 facebook group members, ~10 active ●Toured Prof. David Schuster's lab and learned about cooling to superconducting temperatures and software interfaces to quantum computers ●Planning a hackathon in spring to make Prof. Schuster's computers compatible with QuTiP and qiskit	Aug 2019 - Now