

## Anand Jain

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