

# Daniel(Chaofan) Tao

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## Education

### Duke University

Durham, NC

B.S OF COMPUTER SCIENCE (CS)

August, 2017-December, 2020

- GPA: 3.9/4.0
- Named to the Dean's List (top third in the school) every semester

## Experience

### Intersystems

Cambridge, MA

DATA PLATFORM DEVELOPMENT INTERN

May, 2019-August, 2019

- Working in the Core Development team on a project about **PMML** using ObjectScript
- Compared the IRIS PMML with standard JPMML with Java and Python, fixed 14 existing bugs in IRIS PMML
- Added functionality to support NN, SVM, Kmeans, Naive Bayes, and Random Forest in IRIS PMML with ObjectScripts
- Added SQL and JSON support in IRIS PMML
- Worked on a industrial codebase that would influence real customers, wrote unit tests to ensure quality
- Used Swarm and Perforce for source control

### Duke Prediction Analysis Lab

Durham, NC

UNDERGRADUATE RESEARCH ASSISTANT

October, 2017-Present

- Researched the application of interpretable NN in medical area with the help of prof. **Cynthia Rudin**
- Published ***This Looks Like That: Deep Learning for Interpretable Image Recognition*** on arXiv
- Applied PPNNet to analyze breast mammograms to give a self-explained diagnosis of breast cancer
- Used Tensorflow, Keras, Scikit-learn and Pytorch for the dataset of Breast Cancer, achieved **state-of-the-art** result

### Duke Information Initiative

Durham, NC

SOFTWARE DEVELOPER INTERN

May, 2018-August, 2018

- Built an **interactive web app** with Plotly to demonstrate and analyze datasets of single cell sequencing
- Built a pipeline to reduce dimension, cluster, and visualize single cell sequencing data
- Used TSNE, PCA, autoencoder, KMeans, and other deep learning clustering methods
- Achieved cluster accuracy of **76%** on testing dataset

### Muze (Startup)

Durham, NC

SOFTWARE DEVELOPER

September, 2018-December, 2018

- Implemented neural-style image filters for the iOS App
- Used CoreML, Pytorch, Keras and Tensorflow to implement machine learning features to the APP

## Projects

### <Router Simulator>

Durham, NC

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April, 2019

- Built a virtual router using Routing Information Protocol (RIP).
- The router could perform tasks like ping, traceroute, etc. dynamically

### <Duke AI for Art Competition>

Durham, NC

PYTHON, PYTORCH

February, 2019

- Used Neural Style method to generate art works
- See <https://github.com/danieltao/DukeAIforArt> for some art pieces

### <Roomly>

Durham, NC

UNITY, C#

October, 2018

- Programmed a 3D educational maze game with Unity. Players must solve puzzles to open doors
- Implemented Facebook API and allowed user to use python in the game

## Skills

<b>Programming</b>	<b>Fluent:</b> Python, Java	<b>Proficient:</b> JavaScript, C, Cpp, Assembly, Latex
<b>Source Control</b>	Git, Perforce	
<b>Web Dev.</b>	HTML, CSS, Bootstrap, React, Django	
<b>Courses</b>	Machine Learning (graduate level), Database, Operating Systems, Computer Architecture, Internet, Data Structure, Algorithms	
<b>Languages</b>	English, Chinese	