Benjamin T. Yang

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Education

Columbia University - May 2022
MS in CS, Research Thesis Track | GRE: 162V, 168Q, 5.5W

Rutgers University Honors College - May 2020
B.S. in CS, Math, Cognitive Science; Minor in Philosophy;
GPA: **3.9**/4.0 | Dean's List All Sems | Cap & Skull

Coursework
***Undergrad*:** Data Structures, Algorithms, AI, Operating Systems, Distributed Systems, Probability
***Grad*:** NLP, Time Series, Algorithms, ML for Genomics, Quantum Computing, Computer Graphics,, PLs & Compilers
Certificates: Coursera Deep Learning Specialization

Research Experience & Projects

Columbia Graphics & UI Lab > About > Fall 2021
- Worked with ~**terabytes of radar data from Antarctica** ecological projects to construct a **Unity VR application** for easy data viewing and visualization
- Constructed a area calculation script using interpolation
- Released version 2.0 of a network routing / event handling library in Unity called MercuryMessaging

Graduate Work + Research > Fall 2021
- Achieved a **70% accuracy on detecting security vulnerabilities** in code using NLP based off Google **Electra**
- Synthesized different Kaggle and offline datasets to train an LSTM-based RNN that predicts and **suggests** a **rhyme** given the input of another on existing rap lyrics
- Used Unity and 2-D Anima to build a working model of **inverse kinematics** for a 2-legged walking dog, wrote a research paper on the benefits of neurorehabilitation

Combra Lab | Spiking Neural Nets > About > Spring 2019
- Recreated SNN with CNN-inspired architecture following **Diehl et al. 2015** STDP Paper in Python & Tensorflow
- Built Astrocyte units in SNN for **MNIST digit recognition**

District Attorney's Office of NY > About > Summer 2018
- Developed **parsing script** with a team of four other fellows to translate PDF data into CSV format
- Held weekly SCRUM meetings and sprints with clients to ensure the project met constantly updating scopes
- Learned **PyTesseract, Pillow, Wand**, and optical character recognition python libraries to parse PDF data

Skills

Programming Languages
Proficient: Python, Java, J, Go, JavaScript
Learning: R, Swift, Android, Bash, OCaml, Haskell, C/C++
Frameworks / Tools
Proficient: Django, ReactJS, SQL, Git, Docker, Linux, Jupyter
Learning: MongoDB, Angular, Tensorflow, SciKit, Keras, AWS, Bloomberg, Unity, Heroku, VBA, D3.js, VIM, Flask

Work Experience

Amazon | Applied Scientist Intern > About > Summer 2021
- Leveraged multilingual language models such as **mBART** and **XLM-r** for semantic parsing tasks
- Annotated and parsed **2.5 million** data utterances, and used machine translation to acquire French, Hindi, and Italian datasets for training
- Achieved an **~80% accuracy** on English data, and **~60% accuracy on French, Hindi, and Italian data.**

Recurse Center | Participant > About > Fall 2020
- Built a Karuta web app in ClojureScript, Clojure, and Datomic
- Learned modern cryptography algorithms through Cryptopals and OverTheWire wargames exercises
- Researched miscellaneous topics: GPUs, Reinforcement Learning, Haskell

Datadog | Software Engineering Intern > About > Summer 2019
- Developed a Python service to aggregate **millions of notifications and data** processed per second for Slack, Email, and HipChat
- Worked with Kubernetes, Cassandra, Kafka, Spinnaker, and other containerization / data wrangling tools to deploy services
- Demoed relevant projects @ **AWS Summit and DashCon** for Datadog

MakeSpace | Platform \ Software Engineer> About > Summer 2018
- Developed Item Tagging Widget using **Computer Vision** and Machine Learning APIs like **Amazon Rekognition** & Google Cloud Vision
- Created in-house ML model to tag **~1 million** photographs of stored items
- Wrote a data **analysis report** on the volume and type of stored items using data visualization software (**D3.js**, etc.)

Leadership Experience

CS First-Year Interest Group Seminar | Instructor > About > Jan 2018 - Dec 2018
- One of **80** undergraduates teaching my own accredited college course.
- Deliver **10** original, activity-based lesson plans to a diverse group of **25** first-years as the sole instructor for ***Exploring Computer Science***.

Outreach Director / VP | Rutgers CS > About > Fall 2016 - Present
- Building a strong Rutgers tech community by establishing **monthly speaker series** with 10+ speakers reaching a **300+ student audience**
- Running **RUnite CS** Ambassadors with **15** trained student developers, visiting **20+** middle and high **schools**, reaching **~1500 students**
- Collaborating with the CS department to improve recruitment efforts, community spaces, professional development, alumni relations, etc.

President | Quantitative Finance Club > About > Winter 2017 - Present
- Orchestrated and taught **14** advanced **technical presentations** involving trading models, finance, Black-Scholes & computer science theory
- Mentored **100+ members** regarding technical and practical knowledge for interviews and career search in addition to weekly mock interviews
- Maintained relationships with **40+ alumni** community, **speaker network**

Other Involvements & Activities

RU STEM x Arts > **Math & Design Chair** > Fall 2017 - Present
Petey Greene > **Tutor at Edna Mahan Correctional Facility** > Fall 2018 - Spring 2019
HackRU > **Finance & Research / Development Teams** > Fall 2016 - Present
Research Assistant > **Language Acquisition and Processing Lab** > May 2017 - May 2018