Rico Zhu – CS + Math @ Duke

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Professional Experience

CERN, Duke HEP Group - Student Researcher — May 2022 - Current

Duke high energy physics group: implemented Graph Neural Network approach for particle classification on LHC's ATLAS detector and scripts to run and train model on CERN's HTCondor distributed computing network.

Duke University - Student Researcher — September 2021 - Current

Multiphysics geomechanics lab: implemented Fourier Neural Operators to accelerate PDE calculations in a material simulation process to visualize porous geomaterials.

Univ. of Toronto - Student Researcher — February 2021 - August 2021

Intelligent sensory microsystems lab: designed and implemented various RNNs and Neural ODEs for experimental AI hardware (memristor crossbars) to investigate performance. Models developed using Pytorch.

Hack the Northeast - Director of Technology — March 2020 - June 2021

Led team of software developers and graphics designers across 5 different time zones to build a responsive event site using React.js. Volunteered as both MC and mentor during the hackathon of over 1000 participants.

Education

Duke University — August 2021 - May 2025

Double major in Computer Science and Math with an AI and Data Science concentration. 3.87 cumulative GPA. Relevant coursework: CS 201, CS 210, Math 212, Math 218, Math 245. Intended to take: CS 230, CS 370, Math 340, Math 401.

Hackathon Awards & Projects

MIT Blueprint Hackathon - 1st Place — February 2021

With a team of 3, created a chrome extension that helps students study by generating bite-sized quizzes based off of what they read online. Fullstack web app with NLP backend built with spaCy and word2vec models.

Ubisoft, Hack the North - Best Game Design — September 2019

Created game that portrayed the immigrant experience, all while learning C++ from scratch within the 48 hour span of the hackathon. Selected from a hackathon with over 1000 participants.

Online Courses & Certifications

IBM - DL0110EN: Deep Learning (Keras & Pytorch) — January 2019

Topics Covered: Regression, Backpropagation, Machine Learning Theory, Convolutional Neural Networks.

Princeton University - Algorithms, Theory & Machines — September 2018

Topics Covered: Universal Turing Machines, Von Neumann Architecture, Hardware Fundamentals.

Princeton University - Algorithms — May 2018

Topics Covered: Big O Notation, Data Structures & Implementations via Nested Classes, Optimization, Union-Find Algorithms.

Technologies & Toolkits

Python (6 years) Java (6 years) JavaScript (5 years) Git (4 years) C++ (3 years) Pytorch (3 years)
Keras (3 years) React.js (2 years) Matplotlib (2 years) Matlab (currently learning)