

# Tianjie Qiu

tianjie\_qiu@brown.edu | +1 401 612 1221 | Providence, RI | LinkedIn

## EDUCATION

### BROWN UNIVERSITY

Sc.M IN DATA-ENABLED COMPUTATIONAL SCIENCE AND ENGINEERING

Advisor: Prof. George Em Karniadakis

08/2022 - 05/2024

### UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

B.Sc IN PHYSICS AND APPLIED MATHEMATICS | HIGHEST DISTINCTION, DEAN'S LIST

GPA: 3.86

08/2018 - 12/2021

## EXPERIENCE

### RIPEC | DATA ANALYST INTERN

Providence, RI | 12/2023 – Present

- Spearheaded comprehensive public policy research in areas like State Finance and Tax Policy, leading to the development of influential policy briefs and research reports.

### BROWN UNIVERSITY | DATA SCIENCE RESEARCHER

Providence, RI | 07/2023 – Present

- Innovated machine learning tools for sentiment analysis, significantly enhancing data-driven decision-making for the Division of Campus Life.

### BROWN UNIVERSITY | GRADUATE RESEARCH ASSISTANT

Providence, RI | 08/2022 – Present

- Advanced the development of unsupervised/weakly-supervised/reinforcement machine learning algorithms for the HL-LHC project at CERN, achieving breakthroughs in jet tagging and particle shower labeling using Graph Neural Networks.

### BROWN UNIVERSITY | TEACHING ASSISTANT AND GRADER

Providence, RI | 08/2022 – 12/2023

- Recognized for excellence in teaching and grading in courses like Dynamics and Vibrations, Electricity and Magnetism, contributing to enhanced learning experiences for students.

### UNIVERSITY OF ILLINOIS | INTERNET SPECIALIST

Champaign-Urbana, IL | 08/2018 – 12/2021

- Pioneered the development and operation of social media platforms, mobile applications, and websites, reaching over 6,000 students and significantly boosting online engagement.

### ILLINOIS GEO. LAB | UNDERGRADUATE RESEARCH ASSISTANT

Champaign-Urbana, IL | 08/2019 – 12/2019

- Collaborated in a cross-university project to analyze Atlantic ocean flow, presenting key findings at the 2019 IGL Fall Meeting.

## SKILLS

#### PROGRAMMING LANGUAGES

C++, Python, Java, MATLAB, Julia, LaTeX, R, SQL

#### LIBRARIES/FRAWORKS

TensorFlow, Keras, Pytorch, Pandas, Seaborn, Django, Scikit-learn

#### TOOLS / PLATFORMS

Tableau, AWS, Linux, Azure, Git, Docker

## PROJECTS / OPEN-SOURCE

### PARTICLE PHASE FLOW IN FIELD

Keras, NumPy, Scikit-learn

- Developed and implemented SympNet and Physics-informed Neural Networks to accurately predict the phase flow of charged particles in random electromagnetic fields, enhancing simulation precision.

### SATURATION TO RESONANCE

Julia, MATLAB, SageMath

- Engineered simulations of resonance behavior in multi-dimensional lattices using linear and non-linear oscillators. Utilized the Ising model, Potts model and Einstein model, showcasing results through detailed visualizations in MATLAB and SageMath.

- Pioneered an Android platform software using Firebase, Web API, and AWS services to provide real-time Premier League information and statistics for over 100 users, significantly enhancing user experience and accessibility for football enthusiasts.

## **HONORS & AWARDS**

- Susan Schaeffer Scholarship (2021)
- James Scholar (2018-2021)

## **PUBLICATIONS & CONFERENCE PAPERS**

- (2023) Rapid, Sensitive Detection of Intact SARS-CoV-2 using DNA Nets and a Smartphone-Linked Fluorimeter. Hankeun Lee, Weijing Wang, Tianjie Qiu, Weishan Huang, Xing Wang, and Brian T. Cunningham. Optical Diagnostics and Sensing XXIII: Toward Point-of-Care Diagnostics, Paper No. 12387-21
- (2022) Rapid detection of intact SARS-CoV-2 using designer DNA nets and a pocket-size smartphone-linked fluorimeter. Hankeun Lee, Weijing Wang, Tianjie Qiu, Weishan Huang, Xing Wang, and Brian T. Cunningham. Biosensors and Bioelectronics. 2023 Mar 16:115228. doi: 10.1016/j.bios.2023.115228.