# Tianjie Qiu

tianjie_qiu@brown.edu | +1 401 612 1221 | Providence, RI | LinkedIn

## EDUCATION

**BROWN UNIVERSITY**                                                              08/2022 - 05/2024
Sc.M in Data-Enabled Computational Science and Engineering
Advisor: Prof. George Em Karniadakis

**UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN**                    08/2018 - 12/2021
B.Sc in Physics
B.Sc in Applied Mathematics
Susan Schaeffer Scholarship(2021), James Scholar, Dean's List, Highest Distinction

## 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/Frameworks | 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.

# 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.