

Xinyun (Leo) Liu

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EDUCATION

Rice University
BS in **Computer Science**, BS in **Physics** GPA: 3.7/4.0

Houston, TX
Aug 2017 - May 2021

SKILLS

Programming Languages:

Proficient – Python | Java | C Familiar – JavaScript | C++ | SQL

Other Technical Skills:

React | Django | Linux | Functional Programming | Parallel Programming

WORK EXPERIENCES

Huawei Technologies Co., Ltd

Shanghai, CN | June 2020 – Sept. 2020

Software Engineer Intern

Python | Django | MongoDB | React | Callgrind

- Automated the process of callgrind.out, analyzed instructions executed, and found the functions that need to be improved among millions of the functions
- Ran automated test, and synchronized the data to the website built by Django, React and MongoDB
- Found that call-graphs of ARM machines is inaccurate due to a different set of registers, decreased the number of instructions by 10%

Solar Physics Research Group, Rice University

Houston, TX | Aug. 2019 – May 2020

Undergraduate Researcher

Python | Machine Learning | GAN | Data Analysis & Visualization

- Used Streamlit (an app framework for Machine Learning) to build an app that can visualize spectrum data from solar corona and monitor the machine learning process that uses gigabytes of data
- Processed linear data as pictures and used GAN to recover the heating event with only hundreds of well-chosen pictures
- Validated the physics model of the heating event and made the algorithm applicable to other data recovery problems

Bonner Nuclear Laboratory, Rice University

Houston, TX | May 2018 – August 2018

Undergraduate Researcher Assistant

C++ | Distributed Computing | Machine Learning | ROOT | Linux

- Analyzed the data of tens of millions of collisions of J/psi mesons and strange charm mesons collected from LHC
- Used boost decision tree, rectangular cut and multi-layer perceptron to train the data to get a better selection of the signal through TMVA
- Optimized the C++ software in the Linux environment and increased the signal significance by 200%

SELECTED PROJECTS

ChatApp: A full-fledged chatting app

Rice University | Jan 2020

Java | UML | MVC | OOP | Computer Networking

- Designed, developed, and documented a P2P chatting that supports any format of message and chatrooms
- Implemented the MVC framework and the Visitor Design Pattern on a Java program with 4000+ lines of code
- Gained valuable experience in object-oriented design and tested with a group of 50+ people

Pretty Pictures: Image Breeding and Mutation

Rice University | Nov 2018

Java | JavaScript | JSON | Functional Programming | Genetic Algorithms | Spark

- Designed data structures (alleles, geneTree, imageFunction, etc.) that streamlines representing, composing, and randomizing image functions through functional programming
- Implemented a genetic algorithm that iteratively improves existing gene trees through crossbreeding and mutation to produce artificial images
- Integrated the backend computation with a web page to enhance user experience