Cheng Tao

Incoming graduate for UWM Quantum Computing

25 August 1998
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Education

Vanderbilt University — May 2020
B.S. in triple majors

Computer Science — GPA: 3.950

Mathematics — GPA: 3.857

Physics (with Honors) — GPA: 3.833

Skills

Proficient : C, C++, Java, Python
Familiar : SQL, Ruby, Julia, Scheme, Prolog
Quantum : Qiskit, Cirq
Science : Matlab, Mathematica
WebDev : HTML, CSS, JS
Design : Adobe Photoshop, Acrobat, Lightroom, Latex
Language : English, Mandarin, Japanese
Other: MS Office, Git, Unix

Extra-Curricular

Judge @ Vandy Debate Team
- organize Parliamentary debate tournament
- evaluate debater performance and give advice

Powerlifting @ Vandy Rec
- I weight 130 lbs and I bench press 150 lbs, squat 210 lbs, deadlift 265 lbs
- coach and give fitness advices for beginner lifter

Work Experience and Internships

Oct'18-Now — Research Assistant for Vanderbilt High-Energy Physics
Develope a methodology to discover Higgsino via Vector Boson Fusion inside Large Hadron Collider under the supervision from Prof. Alfredo Gurrola.

Projects

Jan'20 — Vanderbilt Course Scheduler
A **Python** project that use depth-first search to produce course plan for Vanderbilt students

Sept'19 — AI Course project: Pac-Man AI
Implemented Pac-Man agents in **Python** using reinforcement learning, A* search, alpha-beta minimax, and Q-learning techniques.

Sept'19 — Kaggle Challenge: Higgs Boson Machine Learning
Classified Higgs Boson from background noise using machine learning, **scikit-learn and Tensorflow**, including random forest, SVM, logistic regression and neural network.

Sept'19 — Programming Language Course Project: Sudoku Solver
Implemented backtracking sudoku solvers on **C++, Racket and Prolog**. Demenstrated the difference between imperative, functional and logic programming language.

Sept'18 — Software Development Course Project: Expression Tree
An interactive **C++** project that parses mathematical expression into tree data structure. Used of **design pattern** extensively to implement functionality like syntax checking, customization, variable setting, command roll back.

Electives and MOOCs

Electives — Artificial Intelligence, Machine Learning, Numerical Analysis
Operating System, Programming Language, Data Structure
Quantum Computing, Quantum Field Theory, Solid State Physics, Statistical Mechanics

MOOCs — The Complete 2020 Web Development Bootcamp
HTML, CSS, Javascript, Node, React, MongoDB

Talks

Nov'19 — 86th Annual Meeting of the APS Southeastern Section — North Carolina
Search for Higgsino inside Large Hadron Collider via Vector Boson Fusion

Achievements

-Got an A in Graduate Quantum Field Theory in my junior year
-Got an A in Graduate General Relativity in my junior year
-Dean's list all semesters
-Top 25% in Euclid Math Challenge
-First Place, Suzhou High School Math Team Challenge
-Top 10% in Chem 13 News Exam held by University of Waterloo
-Top 5% in UK Senior Math Challenge
-Top 5% in Hypatia Waterloo Math Challenge