Tony Tong

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EDUCATION

University of California, Irvine — Class of 2020
B.S. Physics — Junior
B.S. Computer Science and Engineering

EMPLOYMENT

Intelligent Education — Irvine, CA
Full Stack Developer — Sep 2018 - Present

- Maintained a Canvas-like application on GCP; structured a NoSQL database; created a handful of RESTful APIs
- Worked in a team of six along with Prof. Peter Taborek; the app was used by 300+ students the following quarter
- Developed the Web UI under React framework; integrated third party applications such as Quill
- Wrote multiple Python utilities scripts to analyze students' data and export JSON into real exams
- Improved the security by discovering and fixing a vulnerability of the legacy system caused by a hidden API

Department of Physics and Astronomy — Irvine, CA
Tutor — Jul 2018 - Sep 2018

- Edited and solved over 500 undergraduate level Physics problems using Mathematica and LaTeX
- Increased the efficiency of publishing problems by writing a Python script to synchronize the local Mathematica files and content on Intelligent Education

RESEARCH

Satellite Hydrology Bits Analysis And Mapping — Irvine, CA
Group Leader, Undergraduate Researcher — Jan 2018 - Present

- Computed hydrological anomaly by analyzing data from GRACE satellites with Dr. Cedric H.David(JPL, NASA)
- Led a team of four; gave weekly assignments and feedback (sample); hosted meetings; reported to Dr. David
- Wrote Python scripts to download data from Earthdata and interact with netCDF and shapfile
- Added cross-platform compatibility by Docker and native scripts based on OS (Linux/Windows/OS X)
- Improved the CI process by supporting py2/3 compatibility, maintaining dependencies and writing test scripts

Electron Identification - ATLAS Research — Irvine, CA
Undergraduate Researcher — Jul 2018 - Sep 2018

- Worked with Prof. Daniel Whiteson and Kevin Bauer Ph.D; added support for MadGraph5: my blog post
- Set up Linux clusters to generate high volume of particle collision simulation data with MG5+Pythia+Delphes
- Wrote multiple Python and C++ scripts to analyze the data from the detector simulation with ROOT

ACCOMPLISHMENTS

Ranked #19 in IEEExtreme Competition, U.S. (top 5% worldwide out of 4049 teams) — Oct 2018

- Worked in a team of three during the 24-hour coding competition; practised twice a week as an ACM member

Eta Kappa Nu Member (academic honor society) — Dec 2018

- Completed a series of challenges including multiple professional events and a written test

One Year - 92 Units - 3.92 GPA — Sep 2016 - Jul 2017

- Completed 92 units with 3.92 GPA in freshman year (180 needed to graduate); Dean's Honor List

PROJECTS

Minesweeper: Implemented BFS & logic programming to solve the minesweeper
Processor : Designed and optimized a processor to perform matrix multiplication using VHDL
Scheduler: An app to check the course status and send a notification email when the course is available
ZigZag: A Dancing Line-like iOS game

RELEVANT COURSES AND SKILLS

Courses: Machine Learning, Artificial Intelligence, Advanced Algorithms, Computer Network, Signal Processing, Digital System, Particle Physics, Relativity & Blackhole, Experimental Physics
Skills: Data Analysis, ROOT, CI (Travis+AppVeyor), Web Dev, React, GCP, Docker, TensorFlow, Haskell