JIACHEN HE

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EDUCATION

University of Glasgow *Septeber 2016 - Present*
Bachelor of science in Physics with Astrophysics, School of Physics & Astronomy

Hongkong University of Science and Technology *Septeber 2017 - June 2018*
Bachelor of science(exchange) in Physics, School of Physics

RESEARCH EXPERIENCES

University *of* Glasgow, University of Birmingham June 2019 - Present
Gravitational Astronomy Group, Student *Undergraduate Honour Project*

· Gravitational Wave detector laser path simulation.
· Narrow banding for detector sensitivity based on signal recycling cavity detuning.
· Testing of General Relativity, black-hole perturbation theory with black hole merger higher modes.

Université Paris Diderot, University of Glasgow September 2018 - March 2019
LIGO-Virgo GWOSC Workshop, Student *Gravitational Wave Project*

· Gravitational wave data analysis on data presentation, Fourier-based methods for noise deduction and whitening & estimation on detection sensitivity of BNS range.
· Templates families evaluation for matched filtering on post-Newtonian, Numerical Relativity methods, filtering and whitening with χ^2 test.
· Parameter estimation with MCMC & Bayesian analysis with Bibly.

National Astronomical Observatories, CAS June 2018 - August 2018
Group of dark-matter and dark-energy, Research Assistant *Cosmology Project*

· Individually finished parameter estimation on tidal effect on dwarf galaxies in galactic simulations.
· Noise deduction in 21CM H-line array with eigenvalue analysis on covariant matrix.
· Joint developing of DJI-drones as a artificial star & measurement station with high accuracy with GPS differential technology for telescope array calibration.

Institute of Physics, Chinese Academy of Sciences(CAS) June 2017 - July 2017
Superconductivity group 8, Research Assistant *Internship on condensed matter*

· Theoretical evaluation of iron-based superconductor with BCS theory.
· Material manucaption for iron-based superconductor - crystal & related circuit systems.

COURSES & SKILLS

Physics & Astronomy

· General Physics & Astrophysics.
· Instruments on Gravitational wave, radio & optical telescopes. Cosmology, General Relativity. Astronomical data analysis, Bayesian interferer.

Programming

· Python, Julia, Matlab, Mathematica, Git, Shell, Docker, PowerShell, LaTeX.
· Machine learning & Artificial Intelligence with Reinforcement Learning;
· Server maintenance under Windows&Linux.