Po-Jen Wang

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Postdocotral Researcher trained in Theoretical Particle Physics, with a diverse research interest and experience in Quantum Computing and Machine Learning.

EDUCATION

New York University Sep 2021
Ph.D. in Theoretical Physics
Thesis: *Exceptions in Thermal Dark Matter Freeze-Out,* Advisor: Joshua Ruderman

University of California, Berkeley Aug 2014
Bachelor of Arts in Physics and Applied Mathematics (Honors)

EXPERIENCE

National Taiwan University, IBM Q-hub Jan. 2023 – Present
Postdoctoral Researcher Taipei, Taiwan

- Studies of Learning-Based Quantum Mitigation Algorithms and Quantum Process Tomography
- Qubit-efficient VQE calculation on large molecules using linear-scaling DFT (`BigDFT` FORTRAN codes) and Daubechies wavelets for drug-design
- Qiskit Hackthon Taiwan 2023/2024 Organizer and Mentor

University of Notre Dame Sep. 2021 – Nov. 2022
Postdoctoral Research Fellow Notre Dame, IN

- Studies of Axion-Gauge Field System with numerical Python codes and `CosmoLattice` C++ codes
- Inverse-Decay Thermal Dark Matter and their experimental detectability.

Taiwan Coast Guard Administration/Ocean Affairs Council Feb 2020 – Feb. 2021
Military Service Taiwan

- DevOps and project management for integrated maritime information website: ocean.taiwan.gov.tw
- Design of database schema and batch format conversion to Open Data standards
- Analysis of geographical and maritime data with Geographical Information Systems (GIS) and visualization with **leaflet.js**

SKILLS

Programming Languages : Python, C, C++, SQL, Javascript, HTML, CSS
Scientific Computing : Mathematica, Numpy/Scipy/Pandas, Julia, MATLAB
ML Frameworks: Scikit-Learn, Tensorflow, PyTorch, HuggingFace
DevOps: Docker, Bash, Git, AWS (Lightsail)
Quantum Computing Qiskit, Pennylane, QuTiP
Languages Mandarin (Native), English (Fluent), Japanese (Intermediate)

SELECTED PUBLICATIONS

- *Forbidden Dark Matter Annihilations into Standard Model Particles,*
  R. T. D'Agnolo, Di Liu, J. T. Ruderman and P. J. Wang,
  Journal of High Energy Physics, **21**, 103 (2021), arXiv:2012.11766
- *Thermal Relic Targets with Exponentially Small Couplings,*
  R. T. D'Agnolo, D. Pappadopulo, J. T. Ruderman and P. J. Wang,
  Physical Review Letters 124, no.15, 151801 (2020), arXiv:1906.09269
- *Exponentially Light Dark Matter from Coannihilation,*
  R. T. D'Agnolo, C. Mondino, J. T. Ruderman and P. J. Wang,
  Journal of High Energy Physics, **1808**, 079 (2018), arXiv:1803.02901
- *Surface Trap for Freely Rotating Ion Ring Crystals,*
  P. J. Wang, T. Li, C. Noel, A. Chuang, X. Zhang and H. Häffner,
  Journal of Physics B: Atomic, Molecular and Optical Physics, arXiv:1412.3551

Journal Referee Experience: Journal of High Energy Physics (2022)
[Google Scholar] [INSPIRE]