

Research Fellow (Physics)
Nanyang Technological University

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Posted Nov. 12, 2024, set to expire May 6, 2025

Job Title	Research Fellow (Physics)
Department	School of Physical and Mathematical Sciences
Institution	Nanyang Technological University Singapore, , Singapore
Date Posted	Nov. 12, 2024
Application Deadline	Open until filled
Position Start Date	Available Immediately
Job Categories	Professional Staff
Academic Field(s)	Physics - General
Job Website	https://ntu.wd3.myworkdayjobs.com/en-US/Careers/details/Research-Fellow--Physics-_R00019031
Apply By Email	
Job Description	

Join Our Team at the School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore

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The School of Physical and Mathematical Sciences (SPMS) at NTU Singapore hosts research and education activities in two divisions: Division of Mathematical Sciences (MAS) and Division of Physics and Applied Physics (PAP). PAP covers many areas of fundamental and applied physics, including quantum information, condensed matter physics, biophysics, and photonics. Over the years, SPMS has attracted talented individuals from around the world and Singapore to join as scientific leaders and researchers.

We are seeking a Postdoctoral Research Fellow to contribute to a project focused on using neural network quantum states and advanced machine learning algorithms for simulating realistic microscopic Hamiltonians for quantum spin liquid phases and other frustration driven quantum phases in interacting spin systems, that cannot be efficiently simulated using conventional numerical approaches.

Key Responsibilities:

- Construct realistic microscopic model Hamiltonians relevant to real quantum magnets that can host quantum spin liquid states, focusing on Kagome lattice antiferromagnets and the Kitaev model
- Use neural network quantum states with deep artificial neural network architectures to simulate such Hamiltonians
- Construct experimentally observable properties of quantum spin liquid states
- Collaborate with experimentalists to identify signatures of spin liquid states in candidate materials
- Extend to other frustration-driven novel quantum phases

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Job Requirements:

- Ph.D. in Physics or related field
- Knowledge of quantum many body physics and quantum phase transitions
- Familiarity with neural network quantum states and artificial neural networks
- Experience in collaborating with experimentalists
- Proficiency in computational methods

The College of Science seeks a diverse and inclusive workforce and is committed to equality of opportunity. We welcome applications from all and recruit on the basis of merit, regardless of age, race, gender, religion, marital status and family responsibilities, or disability.

We regret to inform that only shortlisted candidates will be notified.

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Contact

School of Physical and Mathematical Sciences
Nanyang Technological University
Singapore



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