CHAKRADHAR RANGI

CONTACT

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EDUCATION

BS-MS Dual Degree, Major in Physics **May 2020**
Indian Institute of Science Education and Research(IISER) Grade Point: 8.59/10
Bhopal, Madhya Pradesh, India

12th Grade **May 2015**
Kendriya Vidyalaya RWF, Bangalore, India Percentage: 95.6
Central Board of Secondary Education Physics: 95/100

10th Grade **May 2013**
Kendriya Vidyalaya RWF, Bangalore, India CGPA: 10.0/10.0
Central Board of Secondary Education Physics: 10.0/10.0

INTERNSHIPS AND PROJECTS

Project Ongoing
Jawaharlal Nehru Centre for Advanced Scientific Research(JNCASR),
Bangalore, India
Title: Exact Solution of Kitaev-Chain under piece-wise temporal noise using Transfer Matrix Method.
Supervisor: Dr. Vidhyadhiraja N.S., Associate Professor, JNCASR

MS Thesis August 2019 - June 2020
Indian Institute of Science Education and Research Bhopal, India
Title: Development of a Python code for modelling Trajectory Surface Hopping on Ab Initio Potential Energy Surfaces.
Supervisor: Dr. Varadharajan Srinivasan, Associate Professor, IISER Bhopal

- The project aimed at developing a highly efficient python wrapper for Time-Dependent Density Functional theory based Trajectory Surface Hopping algorithm on top of an electronic structure calculation package 'NWCHEM' to simulate Non-Adiabatic Dynamics for large molecular systems.

Skills achieved: Many advanced concepts in Electronic Structure theory, atomic & molecular physics, time-dependent quantum mechanics, large scale computing.

Summer Internship May 2019 - July 2019
Jawaharlal Nehru Centre for Advanced Scientific Research(JNCASR),
Bangalore, India
Title: Time evolution of Kitaev-Chain under piece-wise noise using Transfer Matrix Method.
Supervisor: Dr. Vidhyadhiraja N.S., Associate Professor, JNCASR

- The project aimed at understanding the decoherence/revival of Majorana zero modes(MZMs) in a Kitaev Chain subjected to a piecewise noise with amplitude that retains in the same topological/trivial phase using Transfer Matrix Method.

Skills achieved: Graduate quantum mechanics, Topological phases and Dynamical quantum phase transitions.

Summer Internship May 2018 - July 2018
Indian Institute of Science Education and Research Bhopal, India
Title: Machine Learning for applications in Physics
Supervisor: Dr. Nirmal Ganguli, Assistant Professor, IISER Bhopal

- The project aimed at understanding Machine learning algorithms such as Neural Networks and its practical implementations using popular libraries such as Keras and PyTorch. To realise its application in physics, I read research article related to Self-Learning Monte Carlo method.

Skills achieved: Basics of Machine Learning, Various algorithms in Machine learning including Multivariate Regression, Classification and Neural Networks, Self-Learning Monte Carlo method.

TEACHING EXPERIENCE

Teaching Assistant, Introduction to Programming, EECS102 Jan 2018 - April 2018
IISER Bhopal

· Worked as a Teaching assistant for an introductory course on programming in C offered by the department of Electrical engineering & Computer Science(EECS) for the freshman at IISER Bhopal.

Teacher, Early Bird Physics Program March 2018 - August 2018
Cheenta Ganit Kendra(Online Platform)

· Was part of the teaching community at Cheenta Ganit Kendra, an online platform for young and motivated high-school students.

SKILLS

Computing	Python, C, C++, Git, LaTeX, HTML
Libraries & Tool	Numpy, Matplotlib, PyTorch, Keras, VPython, QuTiP
Operating System	Linux, Windows

AWARDS AND ACHIEVEMENTS

Innovation in Science Pursuit for Inspired Research (INSPIRE) Fellowship August 2015
Department of Science and Technology, Government of India

Certificate of Merit August 2015
Top 1.5% of Kendriya Vidyalaya Sanghatan(1225 Schools across India)
Students in the 12th grade examination conducted by Central Board
of Secondary Education, India.

CONFERENCES AND SUMMER SCHOOLS ATTENDED

QMAT, 2nd Annual Conference on Quantum Condensed Matter July 2019
Indian Institute of Science, Bangalore, India

Light and Beyond June 2020
International Center for Theoretical Sciences, Bangalore, India

Qiskit Global Summer School July 2020
Qiskit Community, IBM Quantum

A mini-workshop on Quantum Transport using Kwant Dec 2020
Quantum Tinkerer, TU Delft