

Kaling Vikram Singh

B-401 Omaxe City, Lucknow Uttar Pradesh -226025

 Github - Kaling |  LinkedIn - Kaling |  kalingvikram.singh@outlook.com |  +91-9651611814

EDUCATION

National Institute of Science Education and Research (NISER)

Masters of Science in Physics

Aug 2020 - May 2025

Jatani, Odisha, India - 752050

- Currently in Final year of 5-year programme with a CGPA of 8.57.
- Completing a Minor in Computer Science (6 courses in Algorithms, Automata theory and ML)
- Completed courses in Classical, Statistical and Quantum mechanics, and Computation Physics.
- Learnt how to study Chaotic equations using non linear circuits as part of Advanced Physics Lab (an open-ended experimental course which is a part of the Masters curriculum at NISER).
- Set up experiment to study phase transition at Nèels temperature using strain gauge in Advanced Physics Lab.

DAV Public School, Chandrasekharpur, India - 761016

Senior School Certificate examination (CBSE board)

April 2020

(95.4%)

Delhi Public School, Lucknow, India - 226025

Secondary School Certificate Examination (CBSE board)

April 2018

(94.6%)

RELEVANT COURSEWORK

- Classical Mechanics I,II
- Quantum Mechanics I,II
- Statistical Physics
- Special Relativity
- Computation Physics
- Non linear optics
- Advanced solid state physics
- Quantum computation & info
- Experimental Techniques
- Solid State lab
- Advance Physics lab
- Machine learning
- Parametrized algorithms
- Automata Theory
- Discrete Structures & Algorithms

PROJECTS

Research Project on Nanoparticle synthesis using microfluidics

Alabama State University

May 2023 - August 2023

Montgomery, United States

- Under supervision of Dr Vida A Dennis, I synthesize sub 100 nm protein encapsulated PLGA(polymer) nanoparticles using microfluidics.
- Standardized the procedure for synthesis of encapsulated nanoparticles.
- Characterised nanoparticle sizes using DLS based zeta sizer.
- Report can be found at

Research Project on Anti-Corrosive Coatings on copper substrates

Indian Institute of Technology

May 2022 - August 2022

Bhubaneswar, Odisha, India

- Under supervision of Prof Saroj Kumar Nayak, I synthesized GO coated copper substrates to reduce their corrosion rates.
- Studied various aspects of coating parameters, such as pH, temperature, time and concentration dependences.
- Achieved reduction in corrosion rates by 3 times.
- Report can be found at:

Term Project on Thermal Spike model

NISER

Jan 2024 - April 2024

Bhubaneswar, Odisha, India

- Under supervision of Dr Pratap Kumar Sahoo, I worked to model the thermal spike of a substrate on high energy irradiation, as part of computational physics coursework.
- Used python and SRIM (2013) to model the 3D temperature dynamics with respect to position and time coordinates.
- Report can be found at:

Term Project on Irradiated Luttinger semimetal- Weyl semi metals

Indian Institute of Technology

Aug 2023 - Dec 2023

Bhubaneswar, Odisha, India

- Under supervision of Dr Kush Saha, I theoretically studied the effect of light irradiation on luttinger semi metals and synthesis of Weyl semi metals .
- Understood various topological properties of Weyl semi metals.
- Studied floquet theory, K.P perturbation theory, etc.
- The presentation can be found at:

Term Project on Perovskite Crystal structure prediction using ML
NISER

Jan 2023 - April 2023
Bhubaneswar, Odisha, India

- Under supervision of Dr Shubhankar Mishra, I coded a ML model to predict the crystal structure of perovskites based on properties such as electronegativity, potentials etc.
- The accuracy of the model was 94.10% with AUC-ROC of 0.98.
- Report can be found at:

TECHNICAL SKILLS

Characterization Techniques: X-Ray Diffraction (XRD), Scanning electron microscope (SEM), DLS Zeta Sizer.

Languages: Python, LabView, C/C++.

Technologies/Frameworks: Linux, GitHub, CAD software.

LEADERSHIP / EXTRACURRICULAR

Hostel Executive Committee

November 2022 - July 2023

Maintainance Secretary

- Elected as the maintainance Secretary for hostels in NISER.
- Uplifted the hygiene standards in the hostels.

Tvisha Core Committee

March 2023

Core Member

- Appointed as a member of the core committee of Tvisha, NISER's yearly fest.
- Looked after funding, organisation of events and star nights.

National Cadet Corps (NCC)

2016 - 2017

Platoon Commander

- Appointed as the platoon Commander for the school NCC wing.
- Attended summer camps for NCC training.