

# Arun Kumar

*Curriculum Vitae*

Ph.D. Research Scholar

Structural Engineering (ST) Group, Department of Civil Engineering  
Indian Institute of Technology Madras (IITM), Chennai-600036, Tamil Nadu, India  
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## EDUCATION

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|---|-----------|
| <b>Master of Technology (M. Tech.) [Structural Engineering]</b><br>Indian Institute of Technology Mandi (IIT Mandi), Himachal Pradesh, India                    | 2019-2021 |
| <ul style="list-style-type: none"><li>Secured a <b>CGPA of 8.91 / 10</b></li></ul>  |           |
| <b>Bachelor of Technology (B. Tech.) [Civil Engineering]</b><br>Jawaharlal Nehru Government Engineering College (JNGEC) Sundernagar,<br>Himachal Pradesh, India | 2016-2019 |
| <ul style="list-style-type: none"><li>Secured a <b>CGPA of 9.23/ 10</b></li></ul>   |           |
| <b>Engineering Diploma [Civil Engineering]</b><br>Government Polytechnic College Sundernagar, Himachal Pradesh, India   | 2014-2016 |
| <ul style="list-style-type: none"><li>Secured a <b>CGPA of 8.48 / 10</b></li></ul>  |           |

## RESEARCH INTERESTS

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- Structural Dynamics
- Earthquake Engineering
- Seismic Vibration Control
- Computational/ Finite Element Methods
- Earthquake Analysis and Design of Structures
- Liquid Storage Tanks

## SCHOLASTIC ACHIEVEMENTS

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| <ul style="list-style-type: none"><li>University Silver Medal in B. Tech in Civil Engineering, Himachal Pradesh Technical University, Jawaharlal Nehru Government Engineering College Mandi, Himachal Pradesh</li></ul> | 2019 |
| <ul style="list-style-type: none"><li>University Silver Medal in Diploma in Civil Engineering, Himachal Pradesh Takniki Shiksha Board, Government Polytechnic College Sundernagar, Mandi, Himachal Pradesh</li></ul>    | 2016 |

- Awarded with a certificate of merit and scholarship in 10<sup>th</sup> and 12<sup>th</sup> 2012, 2014 standard by Himachal Pradesh Board of School Education

## RESEARCH INVESTIGATIONS

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**Seismic Base Isolation for Rectangular Liquid Storage Tanks** 2020-2021  
**Guide:** *Dr. Sandip Kumar Saha* (M.Tech Thesis)

- Developing MATLAB algorithms for seismic analysis of liquid storage tanks with linear and non-linear models of base isolation systems.
- Seismic-Fluid-structure interaction using Coupled Acoustic-Structural approach.
- 3D-finite element model for seismic analysis of fixed base and base isolated tanks.

**Computational Modelling of Snow Avalanches** 2019-2020  
**Guide:** *Dr. Gaurav Bhutani* (M.Tech-Mini Project)

- Computational modelling of snow avalanches using RAMMS.
- Validation of the RAMMS terrain model with very limited historical avalanche information at Beas Kund region, Manali, Himachal Pradesh.
- Application of the validated RAMMS terrain model in avalanche-prone sites where no historical database is available.

**Finite Element Modeling of Trapezoidal Footing on River Sand** 2018-2019  
**Guide:** *Dr. Vivek* (B.Tech Thesis)

- Experimental investigation on the engineering properties of river sand.
- 3D-finite element model for trapezoidal footing on river sand.
- Investigation of the soil-stress distribution and deformation under trapezoidal foundation.

**Soil Stabilization using Coir Geotextile** 2017-2018  
**Guide:** *Dr. Vivek* (B.Tech-Mini Project)

- Experimental investigation on the engineering properties of river sand, Illite clay, and coir geotextile.
- CBR testing of chemically untreated and treated coir geotextile.
- Experimental investigation on crystallinity behaviour of coir geotextile with respect to chemical treatment using XRD test.
- Investigation of cyclic deformation pattern of coir reinforced pavement using tank study.

## PROFESSIONAL EXPERIENCE

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**Planning and Designing Head** Nirmaan Club, IIT Mandi (2020-2021)  
 Planning and designing head of *Nirmaan club*. Involved in organizing various technical events and workshops related to Civil Engineering.

[https://wiki.iitmandi.co.in/p/Nirmaan\\_Club#2020-21](https://wiki.iitmandi.co.in/p/Nirmaan_Club#2020-21)

**Half-Time Teaching Assistant**

IIT Mandi (2019-2021)

Teaching Assistant for courses: Analysis and Design for Earthquake Resistant Structures Structural Engineering Laboratory. Involved in monitoring experimental procedure, tutorial preparation, and correction of corresponding submissions.

**EXTRA CURRICULAR ACTIVITIES**

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- PG volunteer in various events organized by NSS IIT Mandi 2019
- Volunteer in the 7<sup>th</sup> International Congress on Computational Mechanics and Simulation (ICCMS 2019) organized by IIT Mandi 2019
- Organized technical events in TWASK, technical fest of Jawaharlal Nehru Government Engineering College Sundernagar, Mandi 2018

**SKILLS**

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**Software:** AutoCAD<sup>®</sup>, ABAQUS<sup>®</sup>, ANSYS<sup>®</sup>, ArcGIS, ETABS, MATLAB<sup>®</sup>, REVIT<sup>®</sup>, RAMMS, SAP<sup>®</sup>, STAAD<sup>®</sup>

**Programming Languages:** MATLAB, Python, C++

**PERSONAL DETAILS**

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**Date of Birth:** 28 July, 1997

**Nationality:** Indian

**Linguistics:** Hindi, English, Pahari (Mandeali), Punjabi, Telugu.

**Home Address:** S/o Sh. Surender Kumar, H.No. 56/2, Ward No. 01, Sub-Tehsil Rewalsar, District Mandi, Himachal Pradesh, India-175023