

# SHIVPREET SHARMA

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📍 Indore (M.P), India

## EXPERIENCE

### Research Intern (Mentor : Dr. Neelima Satyam) IIT Indore

📅 8 Weeks

📍 M.P, India

- Developed a 3D Discrete Element Model (DEM) in YADE (open source software) to analysis the collapse of Rock slopes consisting persistent joints.

### Research Intern (Mentor : Dr. Bimlesh Kumar) IIT Guwahati

📅 5 weeks

📍 Assam, India

- Compressibility parameters of Bentonite soil such as Coefficient of consolidation, Compression index has been determined using Artificial Neural Networks (ANNs) and Genetic Programming (GP).

### Research Intern (Mentor : Dr. Anil Mishra) IIT Guwahati

📅 10 Weeks

📍 Assam, India

- Developed a MATLAB code to determine the bearing capacity of foundations , primary and secondary settlement of foundations on a given soil profile.
- Kinetic and Thermo-dynamic study of the adsorption of Pb(II) from aqueous solution by use of Bentonite as an Adsorbent.

### Summer Trainee

#### Samruddha Buildcon Pvt. Ltd.

📅 3 months

📍 M.P, India

- Learn to study and interpret the architectural and structural drawings, computed the field survey data , layout of column using grid-lines, cross checked the laying of reinforcements, audited the concrete in retaining walls.

## TECHNICAL SKILLS

**Software:** Auto CAD , ETABS , Solidworks , SAP2000 , Adobe Photoshop , MS-Office , REVIT

**Programming:** MATLAB , R , Python , C/C++ ,  $\LaTeX$

## PUBLICATIONS

- Sharma, S., Venkateswarlu, H. and Hegde, A. (2019). Application of Machine Learning Techniques for Predicting the Dynamic Response of Geogrid Reinforced Foundation Beds. **Geotechnical and Geological Engineering**. DOI: <https://doi.org/10.1007/s10706-019-00945-7>.
- Shivpreet Sharma, Anil Kumar Mishra and Bimlesh Kumar (2019). Prediction of coefficient of consolidation using Multi-Gene Genetic Programming, **INAE Letters, Springer**. DOI: <https://doi.org/10.1007/s41403-019-00075-9>
- Shivpreet Sharma, Pijush Samui (2019). "Deep learning-based modelling of seismic liquefaction potential" submitted in "Natural Hazards". [Under Review]

## EDUCATION

### Bachelor of Technology (Civil Engineering)

#### Indian Institute of Technology Patna

📅 2019

📍 Bihar, India

- C.P.I : 8.53/10 (In Top 5 of the class)

### AISSCE (CLASS XII)

#### Mar Thoma Higher Secondary School

📅 2014

📍 Indore, M.P.

- Percentage: 87.4%

### CLASS X

📅 2012

📍 Indore, M.P.

- CGPA: 9.2/10



Secured City Rank 1st in International Mathematics Olympiad (IMO) & National Science Olympiad (NSO)



Placed among the Top 10 % in the Chemistry Olympiad, IAPT



MCM Scholarship from IIT PATNA [2015-19]

## PERSONAL SKILLS

Hard-working

Versatile

Determinant

Persistence

Team Player & Problem Solver

## PROJECTS

### Final Year Project | Application of Machine Learning Techniques in Geotechnical Eng. (Mentor: Dr. Amarnath Hegde)

- Using Machine Learning Techniques such as Multivariate Adaptive Regression Splines (MARS), Genetic Programming (GP) for Predicting the Dynamic Response of Geogrid Reinforced Foundation Beds

### Evaluation of Liquefaction Potential of Soil Using Deep Learning

#### (Mentor: Dr. Pijush Samui)

- Deep Neural Networks (DNNs) and Hybrid (ANN-PSO) model has been trained using Post Liquefaction SPT database of Earthquakes which has generated efficient results to predict Liquefaction Potential of soil

## CO-CURRICULAR EXPERIENCE

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Media and PR Coordinator **Anwasha, IIT Patna**

📅 April 2017- 19

📍 Bihar, India

- Worked in a 24 member core team to lead 250+ volunteers to execute 50+ events to organize Bihar largest College Festival, Anwasha.
- Overall in-charge for publicity campaign of the college fest through various mediums such as Social Net-working Platforms, Radio Partners, Campus Ambassador Program and Pre-Anwasha online Events such as Multi-City Auditions, City Rush.
- Headed a team of 50 Volunteers and was also responsible for continuous with leading media houses in Patna.

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Event Organizer

**Anwasha, IIT Patna**

- Organized "Spagaridge". A technical event under ACE, Departmental club of Civil Engineering at Anwasha the Annual Techno-Cultural.
  - Organized "Mr and Mrs. Anwasha". A cultural event at Anwasha the Annual Techno-Cultural Management fest.
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## MINI PROEJECTS

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**Design of a multi-storey hostel building**

- Planned and analyzed a 4-storey hostel with 128 rooms and other vital facilities in Auto-CAD and ETABS respectively. Designed beams, columns and slabs for the same and submitted the design report, graded the best amongst 10 other project reports.

**Generating Plot of Total Acceleration Time history response & Response spectrum development from MATLAB for given earthquake response**

- Using algorithm of Average Acceleration Method and Linear Acceleration Method Plots are generated in MATLAB

## INTERESTS

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Exploring

Movies & T.V series

Internet Surfing

Photography

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