

# KOUSIK MANDAL

## Indian Institute of Technology Madras (India)

Balashpur, Panchgram, West Bengal, India

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### Education

Program	Institution/Board	%/CGPA	Year
<i>M.Tech.</i> (Geotechnical Engineering)	Indian Institute of Technology Madras Chennai, Tamil Nadu	8.77/10	2020-22
<i>B.Tech.</i> (Civil Engineering )	National Institute of Technology Durgapur Durgapur, West Bengal	7.32/10	2016-20
<i>Higher Secoundary</i>	Gorabazar Iswar Chandra Institution Gorabazar, West Bengal	85.60%	2014-16
<i>Secoundary</i>	Panchgram High School Panchgram, West Bengal	80.14%	2014

### Key Projects

1. ***Inversion of Rayleigh Wave Dispersion Curve Using Machine Learning*** Aug 2021 - April 2022  
(*M.Tech / Guide: Dr. Tarun Naskar*) IIT Madras

- o A model is created for the Inversion of the Rayleigh wave from the fundamental mode of dispersion curve using different ML algorithms. The predicted soil profile has an accuracy of 0.94, which is measured in terms of R-squared error.
- o *Keywords: Deep Learning, Random Forest, LightGBM, CatBoost, XGBoost, MASW*
- o *Language(used): Python, Bash Scripting*
- o *Tools/Libraries (used): Anaconda , GPU, MATLAB, Linux, HPCE*

### Online Courses

- o Udemy: *Deep Learning A-Z* (Aug 2022), *Machine Learning A-Z* (Aug 2022),
- o MathWorks: *Image Processing Onramp* (Dec 2021), *Introduction to Linear Algebra with MATLAB* (Sep 2021), *Introduction to Symbolic Math with MATLAB* (Sep 2021), *MATLAB Fundamentals* (Sep 2021), *MATLAB Onramp* (Sep 2021), *Signal Processing Onramp* (Jan 2022)

### Industrial Training

1. ***Water Supply Scheme and Sewage Treatment Plant*** July 2019  
(*B.Tech*) Durgapur Municipal Corporation, Durgapur

- o Gain knowledge and experience of functional unit of water treatment plant
- o Received hands-on experience of screening, aeration, sedimentation, Flocculation, filtration etc

1. ***Summer Training Program at CPWD*** May 2019  
(*B.Tech*) CPWD, Durgapur

- o Test performed for Building Construction, Cost Estimation, Pile Load Test, Project Management, Road Construction
- o Preparing design mixes, Estimating quantity of concrete required, Supervising concrete mixing, Transport and placement

### Course Work

1. ***Key Courses*** August 2020-April 2022  
(*Core and electives*) IIT Madras

- o *Course: Advanced Foundation Engineering, Advanced Soil Mechanics, Applied Soil Mechanics, Critical State Solid Mechanics, FEM & Constitutive Modelling, Geosynthetic and Reinforced soil structures, Ground Improvement Techniques, Introduction to Computational Geomechanics, Soil Dynamics, Soil Exploration & Field Tests*
- o *Lab: Experimental Geotechnics Lab, Geotechnical Engg. Design Studio*
- o *Seminar: Geotechnical Engg. Seminar*

## Technical Skills

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- Programming Language: Bash, C, C++, HTML, JavaScript, Python
- Tools: Anaconda, AutoCAD, GeoSudio, Latex, Linux, MATLAB, Microsoft Office, PLAXIS 2D

## Workshops

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- Participated in [Ground Work](#) webinar workshop series conducted by Deep foundation Institute

## Achievements

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- Secured All India rank 2267 with 60.65 marks in [GATE](#) 2020.

## Others

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- Hobbies: Travelling, Speedcubing, Learning languages
- Languages: Bengali, Hindi, English

## Declaration

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I do hereby declare that all the details furnished above are true to the best of my knowledge and belief.

Place: IIT Madras, Tamil Nadu (INDIA)

(KOUSIK MANDAL)

Date: 18th Aug, 2022

Note: Highlighted are link to proofs and validation (if required).