

# KUMAR SHWETANK

## PMRF Research Scholar

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📍 Kharagpur, West Bengal - India

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## EXPERIENCE

Ph.D Supervisor : Debasis Deb

**Experimental and numerical analysis of hydro fracking processes in fractured porous rock media**

📅 Jan 2019 – present

📍 IIT Kharagpur, India

- Developing a code for the simulation of generation and propagation of fractures
- Coupling numerical methods SPH and FDM for simulating the fluid flow in porous fractured rock media

Management Trainee

**Coal India Limited**

📅 Oct 2017 - Dec 2018

📍 Ranchi

- Shift in-charge in an Underground Coal mine looking after Safety, Control and Management of manpower
- As a ventilation officer supervised proper fresh air flow to the working face and maintaining good working condition inside mine

Internship

**TransEnigma Pvt. Ltd.**

📅 May 2015 - July 2015

📍 Kolkata

- Developed a fully functional e-commerce web app based on MVC design pattern as a part of TransEnigma's project
- Tools and Languages used: Grails, Groovy, Java

## PROJECTS

M.Tech thesis Supervisor : Debasis Deb

**Establishment and Validation of relationship between Joint Roughness Coefficient (JRC) and Roughness Parameters**

📅 May 2016 – May 2017

📍 Kharagpur, India

- Developed a C++ code for finding out different roughness parameters like  $Z_2$  and  $SD_i$  along the direction of measurement.
- Developed the relationship which could be used to predict the value of Shear strength of any rock sample along any direction of shearing without performing direct shear strength test

## ACHIEVEMENTS

- Selected for prestigious PMRF scheme from MHRD for doing research at IIT Kharagpur (2018)
- Received J.C.Ghosh Memorial award for being the department topper with highest CGPA by IIT Kharagpur (2015)
- Cracked IIT-JEE and got admitted to one of the most premier engineering institute IIT Kharagpur (2012)
- Awarded certificate of Merit by CBSE for outstanding academic performance and for being among the top 0.1% of successful candidates (2009)

## EDUCATION

B.Tech + M.Tech Dual Degree

**IIT Kharagpur**

📅 July 2012 – May 2017

- CGPA 8.95
- One of the department toppers with department rank 2

AISSCE (CLASS XII)

**Chinmaya Vidyalaya**

📅 2011

- 93.6%

AISSE (CLASS X)

**Manas Convent School**

📅 2009

- 94.8%

## TECHNICAL SKILLS

- FEM, SPH, FDM
- C, C++, Latex

## RELEVANT COURSES

- Elements of rock mechanics
- Computational geomechanics
- Applied rock engineering
- Programming and data structures
- Solid mechanics
- Finite element methods
- Transport in porous media
- Design and analysis of algorithms

## EXTRA ACADEMIC ACTIVITIES

- Publicized Two Guinness Record Setting Event – "Jalduta Yatra" in Kolkata, witnessed by more than 25,000 people in a day having budget of more than 1 crore and raised Rs 95,000 as sponsorship from different companies
- Delivered lectures on Stress Management, Time Management, Proactive Leadership and Self Manager for 1st year students of IIT Kharagpur as a Core Team member of VOICE

## INTERESTS

- Spirituality
- Philosophy
- Social service