Riddhi Mandal

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Temporary Address (until July 2019)	Permanent Address
D - 010, ICVS Hall, IISER Kolkata, West Bengal - 741246 INDIA	P - 62, Pandav Nagar, Mayur Vihar Phase-1, Delhi - 110091 INDIA

Phone : +91-7044056505
DOB : 2nd April 1996

EDUCATION

Year	Qualification
2014 - Present	**BS-MS** in Earth Sciences, Indian Institute of Science Education and Research, Kolkata **(Current CGPA: 8.36/10)** *Thesis:* Mechanisms of moderate to large (M_W > 5.5) intraplate Earthquakes in the Bengal basin *Supervisor:* Prof. Supriyo Mitra
2014	**Class 12th**, CBSE **(Percentage: 94.6%)**
2012	**Class 10th**,CBSE **(CGPA: 10/10)**

HONOURS AND AWARDS

- EGU 2019 Early Career Scientist Travel Grant, given to selected abstracts submitted by undergraduate and graduate students, to attend the annual EGU conference
- INSPIRE Fellowship (Monthly stipend for top 1 percentile of students graduating from school, awarded for the whole duration of Bachelors and Masters study by the Government of India)
- CBSE Study Grant for exceptional performance in Class 10th (A one time award for students who scored full 10 on a CGPA scale of 10)
- State rank 53 in the National Science Olympiad

EXAMINATION SCORES (GRE & TOEFL)

- **GRE Score:** 329/340 (Quantitative Reasoning: 168/170 - 94th percentile, Verbal Reasoning: 161/170 - 88th percentile, Analytical Writing: 5/6 - 92nd percentile)
- **TOEFL Score:** 115/120 (Reading: 30/30, Listening: 30/30, Speaking: 25/30, Writing: 30/30)

RESEARCH INTERESTS

- Earthquake Source processes
- Inverse Theory
- Crustal Processes
- Seismicity

RESEARCH EXPERIENCE

- Supervisor: **Dr. Govindan Kutty** (Indian Institute of Space Science and Technology) (May 2015 - June 2015)
    - I have worked on "Numeric Weather Prediction" and worked out the effects of a chaotic system of equations on

predictability. I solved the Lorenz system of equations and worked out how changing the initial conditions on the system affected the state of the system at a later time.

- Supervisor: **Prof. Supriyo Mitra** (Indian Institute of Science Education and Research, Kolkata) (2016 - 2018)
    - I have worked on the seismotectonics of the himalayan region using Back Projection analysis outlined by Ishii et al. (2005) using an algorithm I developed. I have used the back projection of body waves to track the spatiotemporal properties of the rupture for the 2005 Kashmir earthquake and the 2015 Nepal earthquake. The study of the Kashmir region is complete and will soon be submitted for publication in a peer reviewed journal.
    - I have worked on understanding the Coulomb stress changes that took place across the fault during the 2015 Nepal Earthquake mainshock and the subsequent aftershocks to create an understanding of the effect of the mainshock on triggering of the aftershocks to understand whether there is a clear correlation between the regions of stress accumulation and locations of the aftershock fault planes.
    - I have worked on finding the focal mechanism using body wave inversion of the 28^{th} August 2018 Bengal Basin Earthquake which gave us an insight about about the active basement faults beneath the surface. This study has already been submitted for publication in a peer reviewed journal.
    - I have worked on finding the focal mechanism of the 12^{th} September Assam Earthquake (M_w 5.4) using full waveform body wave inversion to connect it to the underlying tectonics of the region and compare it to the previously observed seismicity in the region. At the moment the study is complete and will soon be submitted for publication in a peer reviewed journal.
    - Currently, for my MS thesis, I am studying moderate to large ($M_w > 5.5$) intraplate earthquakes of the Bengal basin using full waveform body wave inversion to understand the underlying tectonics of the region and find the causes of these earthquakes. This will create an understanding of the underplating of the Bay of Bengal region under the Burma plate and how this convergence in being accomodated.

SOFTWARE SKILLS

- **Operating Systems:** Windows, DOS, Linux, MacOS (Experienced with the APIs available on all of these platforms)
- **Programming Languages:** C, C++, Python, MATLAB, BASH, CSH, Fortran (77,90,95,08,13), Perl, HTML, CSS, Javascript, EcmaScript 6+, SQL, PHP, MD
- **Softwares and Tools:** MT5, SAC, GMT, GNUplot, LATEX, Origin

PUBLICATIONS

- S. Dey, D. Powali, J. Chaudhury, M. Ghosh, **R. Mandal**, J. Kanaujia, S. Mitra, "28 August 2018 (Mw 4.5) Bengal Basin earthquake highlights active basement fault beneath the sediments", Current Science *(Submitted)*

CONFERENCES ATTENDED

- EGU 2019 (Received travel grant - Not yet attended)
- Vijyoshi 2014, 2018
- GIAN - A short Course on Active Continental Tectonics
- AMESS - A symposium on the modern advancements in Earth Sciences

TEACHING EXPERIENCE

- Teaching Assistant for course "ES2201 - Geophysics" with instructors Prof. Supriyo Mitra and Dr. Kajaljyoti Borah
- Aided Prof. Supriyo Mitra with a lecture series organised by the Government of India on Advanced methods in Seismology

EXTRACURRICULAR ACTIVITIES

- I am very skilled at website designing and have designed websites for a number of companies. I have also led a team of web developers for a period of almost a year to create the website for our college fest.
- I like coding in general and have created many applications in my leisure time, like a download manager and a webapp for creating carousels easily.
- I also play the violin and had been a part of an orchestra for over five years which I left during my undergraduate years.
- I like painting and have had training in art and painting for over 8 years and have participated in a large number of painting competitions and have been awarded many times.

LANGUAGES

- English
- French (Reading knowledge)
- Japanese (Basic Speaking and Reading Knowledge)
- Hindi
- Bengali

REFERENCES

- **Prof. Supriyo Mitra**, Department of Earth Sciences, IISER Kolkata (thesis supervisor) *Email:* supriyomitra@iiserkol.ac.in
- **Dr. Kajaljyoti Borah**, Department of Earth Sciences, IISER Kolkata *Email:* kajal.borah@iiserkol.ac.in

LINKS

GitHub - https://github.com/arkonique