

Ravindra Raut

Nanded, Maharashtra, India

✉ raviraut206@gmail.com | 🏠 ravindra-raut.netlify.app | ☎ 0000-0002-2615-7757 | 📷 Ravindra-Raut | 🌐 ravindra-raut

Education

Doctor of Philosophy, Biotechnology

NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR

Durgapur, WB, India

2014 → 2021

Master of Technology, Biotechnology

INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI

Guwahati, Assam, India

2011 → 2013

Master of Science, Biotechnology

SRTM UNIVERSITY NANDED

Nanded, Maharashtra, India

2007 → 2009

Bachelor of Science, Chemistry, Botany & Zoology

SRTM UNIVERSITY NANDED

Nanded, Maharashtra, India

2004 → 2007

Research Experience

PhD Research Fellow

NIT DURGAPUR

Durgapur, West Bengal, India

September 2014 → August 2021

- Project: Study of Transposable Elements in rice (*Oryza sativa* L.) and their association in host resistance for diseases
- Discovered that the TEs showed association with disease resistance R-genes in the *O. sativa* Nipponbare
- Studied, investigated, identified and analyzed transposons in 29 rice varieties

Intern

Bio-EGICORE

Lucknow, UP, India

August 2014 → November 2014

- Project: Development of Ayurvedic Medicinal Plant database, A-PLANTS 1.0
- Designed and developed the web-based repository for the scientific and experimentally proven applications of dietary spices and ayurvedic medicinal plants

Graduate Student

IIT GUWAHATI

Guwahati, Assam, India

July 2012 → June 2013

- MTech Project: Development of Seri Bioresource Database (SBDB)
- Constructed and designed the flat file-based database containing information such as silkworm distribution, all the diseases, pathogens, pests, predators, and parasites of silkworms

Graduate Student

SRTM UNIVERSITY NANDED

Nanded, Maharashtra, India

Jan 2009 → June 2009

- MSc Project: Isolation and purification of peroxidase from the hull of soybean (*Glycine max* L.)
- Investigated and tested the various biochemical tests and physiological conditions affecting enzyme activity of soybean hull peroxidase (EC1.11.1.7)
- Discovered that soybean hull peroxidase is a novel thermostable enzyme

Supervisory & Mentoring Experience

Co-Guide

TDU BENGALURU

Bengaluru, Karnataka, India

April 2019 → September 2019

- Supervised projects on transposable element analysis in the rice genome to one graduate and 3 undergraduate students
- Planned, monitored the executed techniques, protocols, and analyzed the outputs

Professional Experience

Visiting Research Scholar

TDU BENGALURU

Bengaluru, Karnataka, India

February 2017 → January 2019

- The University of Transdisciplinary Health Sciences & Technology (TDU), Center of Functional Genomics & Bioinformatics, Malali Gowda Lab

Teaching Experience

Teaching Assistant

TDU BENGALURU

- Taught Ecology and Evolution course to MSc Students
- Orchestrated classroom activities, including tutoring, grading assignments, and evaluating exams results

Bengaluru, Karnataka, India

February 2018 -> June 2018

Teaching Assistant

NIT DURGAPUR

- Taught Bioinformatics Laboratory course to MTech Students
- Designed course content, evaluated assignments, wrote and graded exam
- Oversaw batch of 25 students per semester for four years

Durgapur, West Bengal, India

February 2016 -> April 2019

Workshop Facilitator

TDU BENGALURU

- Conducted practical session on Transposon Discovery and Annotation in 3 (8th, 10th, 12th) NGS workshops
- Taught the topic Genome Browser and Databases in the 14th NGS workshop

Bengaluru, Karnataka, India

October 2018 -> November 2019

Scholarship, Award and Honor

Institute fellowship

BY MINISTRY OF EDUCATION, GOVT OF INDIA

- INR 420000/yr for 5 yrs for PhD research

NIT Durgapur

September 2014 -> August 2019

GATE fellowship

BY MINISTRY OF EDUCATION, GOVT OF INDIA

- INR 96000/yr for 2 yrs for MTech course

IIT Guwahati

July 2011 -> May 2013

GYAN Scholarship Award

BY SCIGENOM RESEARCH FOUNDATION

- The registration fee waived to participate the conference; NGBT2019, Mumbai

Mumbai

-> October 2019

Best Poster Award

BY INSTITUTE OF BIORESOURCES AND SUSTAINABLE DEVELOPMENT, IMPHAL

Imphal

-> December 2012

ICMR-Junior Research Fellow

BY INDIAN COUNCIL FOR MEDICAL RESEARCH, GOVT OF INDIA

- a fellowship for PhD research but Not availed due to availability of Institute fellowship

-> September 2014

ICAR-National Eligibility Test

BY BY INDIAN COUNCIL FOR AGRICULTURAL RESEARCH, GOVT OF INDIA

- for job of Assistant Professor/Lecturer

-> March 2014

BioC2021 Scholarship Award

BY BIOCONDUCTOR

- The registration fee waived to participate BioC2021

Online

-> August 2021

Programming Skill

Programming languages

R, PYTHON, BASH, PERL

Workflow management system

NEXTFLOW, SNAKEMAKE

Containerisation tool

DOCKER

Cloud computing

AWS, GALAXY

Version control

GIT, GITHUB

Data visualization

GGPLOT2, PLOTLY, IGV

Document preparation system

LATEX, R MARKDOWN

NGS skill

Downstream sequence data analysis of

ILLUMINA, OXFORD NANOPORE

WGS

FASTQC, SPAdes, QUAST, PROKKA

RNAseq

TRINITY, RSEM, EDGER, TRINOTATE

Repeat analysis

REPEATMODELER, REPEATMASKER, REPEATEXPLORER

SSR mining

MISA, GMATA

Variant calling

GATK, BWA, VARSCAN, SNPEFF, CLINVAR, MUTALYZE, VARIANTVALIDATOR, ENSEMBL VEP

Micro Array

GEO, ARRAYEXPRESS, LIMMA/BIOCONDUCTOR

Databases

RGAP, ENSEMBL, UCSC, HGVS, DBSNP, PDB, EXPASY, NCBI

Conference Activity

NextGen Genomics, Biology, Bioinformatics and Technologies (NGBT) Conference

Mumbai, India

GENOME-WIDE ANALYSIS OF TRANSPOSABLE ELEMENTS IN DIFFERENT RICE SPECIES AND ITS ASSOCIATION IN PLANT DISEASE RESISTANCE (R) GENES IN ORYZA SATIVA NIPPONBARE

29September 2019 -> 1October 2019

- Poster Presentation, won GYAN scholarship Award

National Symposium and Workshop on Future of functional genomic

Bengaluru, India

GENOME-WIDE ANALYSIS OF TRANSPOSONS IN ORYZA SATIVA L.

13October 2019 -> 14October 2019

- Poster Presentation

International Consultative Meeting on Seri Biotechnology

Imphal, India

DEVELOPMENT OF SERI-BIORESOURCE DATABASE

5December 2012 -> 7December 2012

- Won best poster award

Bioinformatics from sequence and structural perspective

Kalyani, WB, India

DEPARTMENT OF BIOCHEMISTRY AND BIOPHYSICS, UNIVERSITY OF KALYANI

11.March 2019 -> 13.March 2019

- Participation, Practical session on AutoDock vina, GROMACS

Transposable Elements

Berlin, Germany

PHYSALIA-COURSES, BOTANICAL MUSEUM, FREIE UNIVERSITÄT

23.April 2018 -> 27.April 2018

- Participation, Practical session on RepeatModeller, RepeatMasker

9th RepeatExplorer Workshop on the Application of Next Generation Sequencing to Repetitive DNA Analysis

Online

INSTITUTE OF PLANT MOLECULAR BIOLOGY, BRANISOVSKA, CZECH REPUBLIC

25.May 2021 -> 11.June 2021

- Oral Presentation, Transposon analysis of rice (Oryza sativa L.)

Volunteer Work

Organizing Secretary

Bengaluru, India

THE UNIVERSITY OF TRANSDISCIPLINARY HEALTH SCIENCES & TECHNOLOGY (TDU)

26.November 2018 -> 1.December 2018

- We organized the workshop; 8th Training on NGS and Analysis on Genomics, Transcriptome and Transposons

Organizing team member

THE UNIVERSITY OF TRANSDISCIPLINARY HEALTH SCIENCES & TECHNOLOGY (TDU)

Bengaluru, India

October 2017 -> December 2019

- We organized 11 workshops on NGS data analysis on Genomics, Transcriptomics, MetaGenomics, Transposons and a National Symposium on Future of Functional Genomics

Volunteer

CENTRE FOR THE ENVIRONMENT, INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI

Guwahati, India

-> 10. December 2012

- Designed and helped in making Proceeding booklet and in organizing the International Symposium on Bioengineering

Training & Certification

Linux Admin Training

BESANT TECHNOLOGIES

Bengaluru, India

October 2017 -> November 2017

Image Analysis Course

C-CAMP, BANGALORE

Bengaluru, India

29. August 2019 -> 30. August 2019

Python Programming Training

LCIPL BANGALORE

Bengaluru, India

8. June 2019 -> 16. June 2019

Bioconductor for Genomic Data Science

COURSERA

Online

-> 16. August 2019

Genomic Data Science with Galaxy

COURSERA

Online

-> 11. August 2019

Introduction to Git and GitHub

COURSERA

Online

-> 18. July 2019

Data Visualization Using Python

IBM

Online

-> June 2019

Introduction to the Tidyverse

DATA CAMP

Online

-> 17. August 2019

Publication

Book Chapter

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- Subhankar Roy Barman, Ravindra A Raut, et al., Recent Advances in the Development of Transgenic Crop Plants, Biosafety Aspects, and Future Perspectives, Apple Academic Press, 2017, vol 2, pg 294

Conference Article

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- Ravindra Raut, Silk statistics of India, Mejkankari ICMS, 2012, pg 24