

Pronoy Kanti Mondal

PhD Student in Statistics
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Statement

I am looking for postdoc position in computational biology. I want to apply statistical and computational techniques to solve realistic problems arising in biology.

Education

Indian Statistical Institute (ISI), Kolkata, India

Ph.D. Student, Statistics, 2015 to 2021

Supervisor: Dr. Indranil Mukhopadhyay

Thesis title: On some statistical problems in single-cell transcriptome data analysis.

M.Stat, Statistics, 2014

Dissertation title: On high dimensional two-sample tests based on nearest neighbors.

B.Stat, Statistics, 2012

Academic Employment

Indian Statistical Institute (ISI), Kolkata, India

Junior Research Fellow, 2015 to 2017

Senior Research Fellow, 2017 to 2022

Awards and Fellowships

Indian Academy of Sciences Summer Fellowship, 2012

International Genetic Epidemiological Society (IGES) Travel Award for developing countries, 2016

Next Generation Biotechnology (NGBT) Students Travel Award, 2016

Junior Research Fellowship based on National Eligibility Test (NET), 2015

Indian Statistical Institute Junior Research Fellowship, 2015

Workshops attended

Workshop on Quantitative Methods for Drug Discovery and Development, 2017

Institute of Mathematical Sciences, National University of Singapore

Workshop on Statistical Data Integration, 2019

Institute of Mathematical Sciences, National University of Singapore

NIBMG-Uchicago workshop on Big Data Analysis in BioMedical Genomics, 2016

National Institute of Biomedical Genomics, Kalyani, India

ISI-Intel workshop on deep learning, 2019

ISI, Kolkata, India

Conferences and presentations

International Triennial Calcutta Symposium on Probability and Statistics, 2015 (Kolkata, India)

Platform Presentation: **On high dimensional two-sample tests based on nearest neighbors**

Next Generation Biotechnology (NGBT), 2016 Annual Meeting (Cochin, India)

Poster Presentation: **IQML: A Robust Statistical Approach for Isoform Level Quantification from RNA-Seq Data**

American Society of Human Genetics (ASHG), 2016 Annual Meeting (Vancouver, Canada)

Poster Presentation: **On testing of gene-gene interaction based on case-control data using genotype similarity between individuals**

International Genetic Epidemiological Society (IGES), 2016 Annual Meeting (Toronto, Canada)

Poster Presentation: **A novel robust statistical approach for isoform quantification from RNA-seq data**

Indo-French Conference on Applied Mathematics (IFCAM), 2017 (IISc Bangalore, India)

Platform Presentation: **RISQ: A novel robust statistical approach for isoform quantification from RNA-seq data**

Indian Society of Human Genetics (ISHG), 2017 Annual Meeting (Bangalore, India)

Poster Presentation: **On testing of gene-gene interaction based on case-control data using genotype similarity between individuals**

Calcutta Consortium of Human Genetics Annual Symposium, 2018 (NIBMG, Kalyani, India)

Platform Presentation: **RISQ: A novel robust statistical approach for isoform quantification from RNA-seq data**

Publication

1. Mondal PK, Saha US, Mukhopadhyay I. (2021), PseudoGA: cell pseudotime reconstruction based on genetic algorithm, *Nucleic Acids Research*, **49(14)**, 7909 - 7924.
2. Das S, Mondal PK, Ghosh S and Mukhopadhyay,I. (2018), Family-based genome-wide association of inflammation biomarkers and fenofibrate treatment response in the GOLDN study, *BMC Proceedings*, **12**, 41.
3. Misra SK, Mondal PK, Faiheng AL, Jami J, Langstieh BT, Mukhopadhyay I and Ghosh P (2019), A Hospital Based Prospective Study On Functional Change In Cases Of Ankylosing Spondylosis In Eastern India, *Journal of Physical Medicine Rehabilitation & Disabilities*, **5**: 033.

4. Mondal PK, Biswas M and Ghosh AK (2015), On high dimensional two-sample tests based on nearest neighbors, *Journal of Multivariate Analysis*, **141**, 168-178.
5. Pal AK, Mondal PK and Ghosh AK (2016), High dimensional nearest neighbor classification based on mean absolute differences of inter-point distances, *Pattern Recognition Letters*, **74**, 1-8.
6. Basak D, Jamal Z, Ghosh A, Mondal PK et al. (2021), Reciprocal Interplay between Asporin and Decorin: Implications in Gastric Cancer Prognosis, *PLoS ONE*, **16(8)**, e0255915.
7. Roy AS, Gorain, PC, Paul I, Sengupta S, Mondal PK, Pal R (2018), Phytoplankton nutrient dynamics and flow cytometry based population study of a eutrophic wetland habitat in eastern India, a Ramsar site, *RSC Advances*, **17**.

Manuscripts under preparation/ ready to be submitted

1. Mondal PK, Mukhopadhyay I, RIBBON: Modeling Single-cell RNA-Seq data with Generalized Linear Model Statistical method accounting for both technological and biological dropouts in single-cell gene expression analysis.
2. Mondal PK, Speed TP, Mukhopadhyay I, SCDI: A fast clustering based method for Single Cell Data Integration.

Work under progress

1. A change-point detection based method to detect transcriptional bursting.

Nonacademic Employment

IMRB International

Associate Research Manager, 2014 to 2015

Teaching Experience

Statistical Inference

Teaching Assistant, with Prof. Saurabh Ghosh

Spring 2018

Statistical Genetics

Teaching Assistant, with Prof. Saurabh Ghosh

Spring 2019

Experience as resource person in workshop

Hands-on workshop on public health analysis and disease modelling

North Eastern Hill University (NEHU), Shillong, India

May, 2017

Follow-up of Hands-on workshop on public health analysis and disease modelling

North Eastern Hill University (NEHU), Shillong, India

December, 2017

Programming Languages known

R, Unix shell, C, MATLAB, Python (Basic), HTML (Basic)

Other known softwares

SPSS, Tensorflow

Also, I am comfortable with cloud computing.

Language

Native Bengali, Hindi

Fluent English

Reference

Dr. Indranil Mukhopdhyay, Professor, Human Genetics Unit, Biological Sciences Division, Indian Statistical Institute, Kolkata

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Dr. Saurabh Ghosh, Professor and Head of the Department, Human Genetics Unit, Biological Sciences Division, Indian Statistical Institute, Kolkata

(+91) 9830780799 saurabh@isical.ac.in

Dr. Anil K. Ghosh, Professor, Theoretical Statistics and Mathematics Unit, Indian Statistical Institute, Kolkata

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