Curriculum Vitae : Rahul Ghosal

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CONTACT INFORMATION
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EDUCATION

- **Ph.D., Statistics, Department of Statistics, North Carolina State University, August 2016 - December 2019.**
  Advisor: Dr. Arnab Maity
  Thesis: Hypothesis Testing and Variable Selection in Functional Concurrent Regression Model.
  C.G.P.A. : 4.0/4.0

- **Master of Statistics (M. Stat.), Indian Statistical Institute, Kolkata. July 2014 - May 2016.**
  Grade: First Division with distinction
  Specialization: Mathematics, Statistics and Probability

- **Bachelor of Statistics (B. Stat.), Indian Statistical Institute, Kolkata. July 2011 - May 2014.**
  Grade: First Division with distinction

WORK EXPERIENCE

- **Postdoctoral Fellow, 2020- current**, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, Mentor: Dr. Vadim Zipunnikov.
- **Teaching Assistant**, Department of Statistics, N. C. State University, August 15, 2016 - December 2019.
- **Research Intern**, GE Global Research, May-July 2014.

RESEARCH INTERESTS

- Functional Data Analysis
- Variable Selection
- Distributional data analysis and its applications with wearable Data
- Nonparametric Inference
- Shape Restricted Regression
- Bayesian Inference
- Survival Analysis

PUBLICATIONS

- Mirzaei, S., Sengupta, D. and **Ghosal, R.** (2019-2020). Estimating Menarcheal Age Distribution from Partially Recalled Data, *Biostatistics*.
- **Ghosal, R.**, Maity, A., Clark, T. and Longo, S. (2020). Variable Selection in Functional Linear Concurrent Regression, *J. R. Stat. Soc. C*.
- **Ghosal, R.** and Maity, A. (2021). A Score Based Test for Functional Linear Concurrent Regression, *Econometrics and Statistics*.
- **Ghosal, R.** and Maity, A. (2021). Variable Selection in Nonparametric Functional Concurrent Regression (Accepted to Canadian Journal of Statistics).

- Varma, V. R., **Ghosal, R.**, Hillel, I., Volfson, D., Weiss, J., Urbanek, J., Hausdorff, J. M., Zipunnikov, V., and Watts, A. (2021). Continuous Gait Monitoring Discriminates Community Dwelling Mild AD from Cognitively Normal Controls, *Alzheimer's & Dementia: Translational Research & Clinical Interventions*.
- **Ghosal, R.** and Saha, E. (2021). Impact of the COVID-19 induced lockdown measures on $PM_{2.5}$ concentration in USA, *Atmospheric Environment*.
- **Ghosal, R.** and Maity, A. (2021). Variable Selection in Nonlinear Scalar-on-function Regression, *Submitted*.
- **Ghosal, R.**, Varma, V. R., Hillel, I., Volfson, D., Hausdorff, J. M., Watts, A. and Zipunnikov, V. (2021). Distributional data analysis via quantile functions and its application to modelling digital biomarkers of gait in Alzheimer's Disease, *Submitted*.
- **Ghosal, R.** and Ghosh, S. (2021). Bayesian Inference for Generalized Linear Model with Linear Inequality Constraints, *Submitted*.

ONGOING RESEARCH

- **Ghosal, R.**, Varma, V. R., Volfson, D., Urbanek, J., Hausdorff, J. M., Watts, A. and Zipunnikov, V. (2021+). Scalar on time-by-distribution regression and its application for modelling associations between daily-living physical activity and cognitive functions in Alzheimers Disease.
- **Ghosal, R.**, Ghosh, S., Urbanek, J., Schrack, J. A. and Zipunnikov, V. (2021+). Shape-Constrained Estimation in Functional Regression with Bernstein Polynomials.
- Dey, D., **Ghosal, R.**, and Zipunnikov, V. (2021+). Functional Semi-parametric Gaussian Copula Regression model.

OTHER RESEARCH WORKS AND PROJECTS

- **Ghosal, R.**, Bhattacharya, I. and Ghosh, S. (2019). A Statistical Exploration of Duckworth-Lewis Method Using Bayesian Inference, *arxiv*.

CONFERENCES/PRESENTATIONS

- "Hypothesis Testing in Functional Linear Concurrent Regression" at *International Indian Statistical Association Conference*, University of Florida, 2018. (Poster)
- "Variable selection in Functional Linear Concurrent Regression" at *Midwest ML Symposium (MMLS)*, Chicago, 2018. (Poster)
- "Variable selection in Functional Linear Concurrent Regression" at *2019 IMS/ASA Spring Research Conference*, Virginia Tech. (Poster)
- "Variable selection in Nonparametric Functional Concurrent Regression" at *Summer Research Conference, (SRCOS)*, University of Kentucky, 2019 . (Poster)
- "Hypothesis Testing in Functional Linear Concurrent Regression" at *Joint Statistical Meetings*, Denver, 2019. (Paper)
- "A Score Based Test for Functional Linear Concurrent Regression" at *ENAR*, 2020. (Paper)
- "Distributional data analysis via quantile functions and its application to modelling digital biomarkers of gait in Alzheimer's Disease" at *ENAR*, 2021. (Paper)
- "Distributional data analysis via quantile functions and its application to modelling digital biomarkers of gait in Alzheimer's Disease" at *Georgetown University, Departmental Colloquium Series*, 2021. (Invited Talk)

TEACHING EXPERIENCE AT NCSU

- ST 350, Economics and Business Statistics, *Grader*, Fall 2016.
- ST 350, Economics and Business Statistics, *Grader*, Spring 2017.
- ST 701, Statistical Theory I, *Lab Instructor and Grader*, Fall 2017.

- ST 421, Introduction to Mathematical Statistics I, *Grader*, Spring 2018.
- ST 590, Statistical Methods I, *Grader*, Summer I 2018.
- ST 421, Introduction to Mathematical Statistics I, *Grader*, Fall 2018.
- ST 421, Introduction to Mathematical Statistics I, *Grader*, Spring 2019.
- ST 511-601, Statistical Methods For Researchers I, *Grader*, Summer I 2019.
- ST 563, Introduction to Statistical Learning, *Grader*, Summer II 2019.
- ST 516-001, Experimental Statistics For Engineers II, *Grader*, Fall 2019.

ACADEMIC ACHIEVEMENTS AND HONORS

- Nominated member of Mu Sigma Rho, National Honor Society for Statistics.
- Boyd Harshbarger Travel Award, SRCOS (2019).
- NSF Travel Award, IISA (2018) conference.
- Recipient of prizes in form of book grants by Indian Statistical Institute, Kolkata in the 1st year of Master's degree program in both 1st and 2nd semester in first year (2015).
- Recipient of prizes in form of book grants by Indian Statistical Institute, Kolkata in the 1st year of Bachelor's degree program in both semesters in first year (2011).

TECHNCIAL AND COMMUNICATION SKILLS

- **Computer Language and applications**: R, MATLAB, Python, SQL.
- **Languages Known**: English, Bengali, Hindi.

POSITIONS OF RESPONSIBILITY

- Served as a referee for Journal of statistical Theory and Practice.
- Volunteer in Service Raleigh (2019).
- Technical committee head for Gaming (Technical Fest) in Integration, annual college festival of Indian Statistical Institute in 2014, 2015.
- Volunteer in Annual festival Integration held at ISI Kolkata 2011-2015.
- Volunteer in MTRP (Mathemetical Talent Resarch Programme) in ISI kolkata in 2013-2014.

EXTRA-CURRICLAR ACTIVITIES

- Hobbies: Cricket, Football, Computer Games, Reading Books, Playing Guitar.
- Blood donor at donation camp organized by ISI club, Prerana (NGO).