

# Debang Dey

SUMMARY	<ul style="list-style-type: none"> <li>• Biostatistician with eight years of rigorous training in statistics, expertise in statistical inference, machine learning, Bayesian modeling, and developing statistical methodologies.</li> <li>• Research interests are multilevel mixed longitudinal data, causal inference, network analysis, highly multivariate spatial data, with applications to <i>wearables, mobile health, ecological momentary assessment, mental health, environmental sciences and sports analytics</i>.</li> </ul>
EDUCATION	<p><b>Johns Hopkins Bloomberg School of Public Health, Baltimore, USA</b>  <i>PhD candidate in Biostatistics</i> Aug 2017 - May 2022 (Expected)</p> <p><b>Indian Statistical Institute, Kolkata, India</b>  <i>Master of Statistics, First Division with Distinction</i> July 2015 - May 2017</p> <p><b>Indian Statistical Institute, Kolkata, India</b>  <i>Bachelor of Statistics, First Division with Distinction</i> July 2012 - May 2015</p>
RESEARCH EXPERIENCE	<p><b>Amazon</b>  <i>Applied Scientist Intern</i> May '21 - Aug '21</p> <ul style="list-style-type: none"> <li>• Invent statistical tools to improve search experimentation in Amazon search relevance team.</li> </ul> <p><b>National Institute of Mental Health</b>  <i>Pre-doctoral fellow</i> Sep '19 - May '21, Current</p> <ul style="list-style-type: none"> <li>• Lead statistical analyses of mobile health data in <a href="#">mMarch</a> consortium (22 sites across the globe).</li> <li>• Develop methods to model dynamic associations between mood, activity and chemical biomarkers.</li> </ul> <p><b>Baltimore City Health Department - JHSPH Data Analysis Support Team</b>  <i>Analyst</i> April 2020 - October 2020</p> <ul style="list-style-type: none"> <li>• Designed COVID-19 risk scores to identify unmet testing needs within Baltimore.</li> <li>• Collaborate weekly with BCHD to assist on ever-emerging issues arising from the pandemic.</li> </ul> <p><b>Johns Hopkins Bloomberg School of Public Health</b>  <i>Graduate student</i> Current</p> <ul style="list-style-type: none"> <li>• Develop methods to jointly model and create networks in mixed datatypes.</li> <li>• Designed graphical processes to analyze highly multivariate spatio-temporal data.</li> </ul> <p><i>Summer Intern under Prof. Vadim Zipunnikov</i> May '16 - July '16 &amp; May '15 - July '15</p> <ul style="list-style-type: none"> <li>• Conducted research in wearables to investigate multi-faceted health impact of physical activity.</li> </ul>
PUBLICATIONS AND REPOSITORIES	<p>Varma V., Dey D., Leroux A., Di J., Urbanek J., Xiao L., Zipunnikov V., RE-EVALUATING THE EFFECT OF AGE ON PHYSICAL ACTIVITY OVER THE LIFESPAN. (2017) <a href="#">Preventive Medicine</a>,101, pp.102-8(Article featured at <a href="#">TIME</a>, <a href="#">Washington Post</a>, <a href="#">WSJ</a>, <a href="#">BBC</a>, <a href="#">WPYR</a> and others).</p> <p>Spira A., Zipunnikov V., Wu M., Dey D., Simonsick E., Ferucci L., Davatzikos C., Resnick C., ASSOCIATION OF CIRCADIAN REST/ACTIVITY RHYTHMS WITH BRAIN VOLUMES IN COGNITIVELY NORMAL OLDER ADULTS. (2017) <a href="#">Innovation in Aging</a> 1.suppl 1: 866-866.</p> <p>Zipunnikov V., Dey D., Leroux A., Di J., Urbanek J., Shrack J., Crainiceanu C., TOTAL PHYSICAL ACTIVITY AND ITS CIRCADIAN ALLOCATION ARE INDEPENDENT PREDICTORS OF MORTALITY. (2017). <a href="#">Innovation in Aging</a> 1.Suppl 1: 1239..</p> <p>Varma V., Dey D., Leroux, A., Di, J., Urbanek, J., Xiao, L., Zipunnikov V., TOTAL VOLUME OF PHYSICAL ACTIVITY: TAC, TLAC, OR TAC(<math>\lambda</math>). (2018) <a href="#">Preventive Medicine</a>:106, p.233-235.</p> <p>Dey D., Deb S., THE SHOOTING PROWESS: SPATIAL MODELLING OF SHOTS IN SOCCER TO SINGLE OUT GOALSCORING ABILITY. (2019). <a href="#">Journal of Sports Analytics</a>, 5.4: 281-297..</p> <p>Kaufman M., Dey D., Crainiceanu C., Dredze M., #MeToo AND RELATED GOOGLE INQUIRIES INTO SEXUAL VIOLENCE: DOES A HASH-TAG CAMPAIGN SUSTAIN INFORMATION SEEKING? (2019) <a href="#">Journal of interpersonal violence</a>, p.0886260519868197..</p> <p>Dey D., Leroux A., THE GOOD, THE BAD AND THE UGLY OF THE BEAUTIFUL GAME: MICRONALYSING FIFA WORLD CUP 2018 (2019) <a href="#">Github</a>..</p>

Dey D., Zipunnikov V., DISCUSSION OF “AN EPIDEMIOLOGICAL FORECAST MODEL AND SOFTWARE ASSESSING INTERVENTIONS ON THE COVID-19 EPIDEMIC IN CHINA” (2020). [JOURNAL OF DATA SCIENCE 18.3: 433-436.](#)

Dey D., Zipunnikov V., CONNECTING POPULATION-LEVEL AUC AND LATENT SCALE-INVARIANT  $R^2$  VIA SEMIPARAMETRIC GAUSSIAN COPULA AND RANK CORRELATIONS (2020) [ARXIV](#)

Dey D., Datta A., Banerjee S. GRAPHICAL GAUSSIAN PROCESS MODELS FOR HIGHLY MULTIVARIATE SPATIAL DATA (2020) [ARXIV](#)

Dey D., Zipunnikov V., Gayananova I., NETWORK APPROACH FOR JOINT MODELLING OF BINARY AND CONTINUOUS MEASUREMENTS IN LARGE HEALTH SURVEYS AND ITS APPLICATION TO FRAILTY AND MORTALITY IN NHANES 1999-2010. (2020) Work in progress.

Dey D., Zipunnikov V., SEMIPARAMETRIC GAUSSIAN COPULA REGRESSION MODELLING FOR MIXED DATA TYPES (2020) Work in progress.

## AWARDS & ACHIEVEMENTS

- Joint Statistical Meetings 2021 paper award from the *Section on Bayesian Statistical Science* of American Statistical Association
- One among the chosen six to present at [Opta Pro Fourm, 2021](#), one of the biggest soccer analytics conferences attended by professionals from over 80 clubs and federations worldwide.
- Joint Statistical Meetings 2020 paper award from the *Section on Survey Research and Methods* of American Statistical Association
- Cleared *Regional Mathematical Olympiad* in 2011 and in 2012.
- Awarded the [INSPIRE](#) scholarship administered by [DST, Govt. of India](#).
- Secured a rank of 2754 (inside **top 0.1%**) in IITJEE 2012 amongst 15,00,000 candidates.
- Ranked among top 5% in SAARC Countries in UNESCO Science Olympiad 2011.

## SKILLS

- **Technical strength:** Proficient in R, Python, Spark,  $\text{\LaTeX}$ , learning C++, HTML.
- **Languages Known:** English, Bengali, Hindi; learning Spanish.

## OTHER INFORMATION

### Positions of Responsibility:

- Reviewer at Journal of Computational and Graphical Statistics.
- Worked as teaching assistants for ten graduate and undergraduate level statistics courses.
- Former instructor at Ramanujan School of Mathematics for two years, giving lessons on advanced high school mathematics.
- Founder and chief-editor at [Sports-Nova](#), a famous multi-sports news website.
- Former columnist at [Indian Football Network](#).
- Sponsorship head and core-committee member of annual techno-cultural-sports fest (*Integration*) of Indian Statistical Institute, Kolkata in 2015 and 2016.
- Organizing head in the Nemesis committee, an annual mystery-solving game show in college.

### Extra-curricular Achievements:

- One of the top five finalists at [US Soccer Hackathon 2018](#), Chicago, USA, July 14-15, 2018. Presented work on how to quantify passing and defending attributes in soccer and use it in real-time to enforce effective and timely substitutions.
- Progressed to the final round in [Economic Times Power of Ideas 2015 Challenge](#), India's biggest hunt for innovative business ideas.
- 1st prize in **Jog Biyog**, an inter-school state level trivia competition.
- 1st prize in a state-level inter-school debate competition in 2008.

**Hobbies:** Playing soccer, swimming, cooking, baking, traveling.