Arun Kumar Kuchibhotla

CONTACT
INFORMATION

Email: karun3kumar@gmail.com
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RESEARCH
INTERESTS

Post-selection Inference, Large Sample Theory, Robust Statistics, Non/semi-parametric Statistics, Concentration Inequalities.

EDUCATION

University of Pennsylvania, Philadelphia, USA.

Ph. D (Statistics)

- Advisors: (Late) Lawrence D. Brown, Andreas Buja.
- Completed in: May, 2020.
- Thesis: Unified framework for post-selection inference.

Indian Statistical Institute, Kolkata.

M. Stat. (Hons),

- Specialization: *Mathematical Statistics and Probability.*
- Completed in: 2015.
- First class with Distinction. Scored 88%.

B. Stat. (Hons),

- Major Subject: *Statistics*
- Completed in: 2013.
- First class with Distinction. Scored 80.5%.

JOURNAL
PUBLICATIONS

1. **Kuchibhotla A. K.** and Basu A. (2015) "A General Set Up for Minimum Disparity Estimation." *Statistics and Probability Letters*, Vol. 96, 68-74, 2015.

2. **Kuchibhotla A. K.** and Basu A. (2017) "On The Asymptotics of Minimum Disparity Estimation." *TEST: An Official Journal of the Spanish Society of Statistics and Operations Research, 22.*

3. **Kuchibhotla A. K.**, Mukherjee S. and Basu A. (2017) "Statistical inference based on bridge divergences." *Annals of the Institute of Statistical Mathematics, 71 (3), 627-656.*

4. Berk R., Buja A., Brown L. D., George E. I., **Kuchibhotla A. K.**, Su W. J., Zhao L. H., (2019) "Assumption Lean Regression" *The American Statistician, 1-17.*

5. Buja A., Brown L. D., **Kuchibhotla A. K.**, Berk R., George E. I., Zhao L. H. (2019) "Models as Approximations — Part II: A General Theory of Model-Robust Regression" *Statistical Science, 34(4), 545–565.*

6. Bellec P., and **Kuchibhotla A. K.**, (2019) "First order expansion of convex regularized estimators" *Advances in Neural Information Processing Systems 32. Pages 3462–3473.*

7. **Kuchibhotla A. K.**, Brown L. D., Buja A., Cai, J., George E.I., Zhao L.H. (2019) "Valid Post-selection Inference in Model-free Linear Regression." *arXiv:1806.04119.* Accepted at *Annals of Statistics.*

8. **Kuchibhotla A. K.** and Parta R. K. (2020) "Efficient Estimation in Single Index Models through Smoothing splines" *Bernoulli, 26(2), 1587–1618.*

9. **Kuchibhotla A. K.**, Banerjee D., Muhkerjee S. (2020) "High-dimensional CLT: Improvements, Non-uniform Extensions and Large Deviations" *arXiv:1806.06153.* Accepted at *Bernoulli.*

PREPRINTS

1. **Kuchibhotla A. K.**, Patra R. K., Sen B. (2017) "Least Squares Estimation in a Single Index Model with Convex Lipschitz link" *arXiv:1708.00145.* Submitted to JASA.

2. **Kuchibhotla A. K.**, Brown L. D., Buja A., George E.I., Zhao L.H. (2018) "A Model Free Perspective for Linear Regression: Uniform-in-model Bounds for Post Selection Inference." *arXiv:1802.05801.* Submitted to Econometric Theory. Invited paper for Festschrift on the occasion of Benedikt Potscher's 65th birthday.

3. **Kuchibhotla A. K.**, Chakrabortty A. (2018) "Moving Beyond Sub-Gaussianity in High-Dimensional Statistics: Applications in Covariance Estimation and Linear Regression." *arXiv preprint arXiv:1804.02605.*

4. Chakrabortty A. and **Kuchibhotla A. K.** (2018) "Tail Bounds for Canonical U-Statistics and U-Processes with Unbounded Kernels."

5. **Kuchibhotla A. K.**, Brown L. D., Buja A. (2018) "Model-free Study of Ordinary Least Squares Linear Regression." *arxiv:1809.10538.*

6. **Kuchibhotla A. K.** (2018) "Deterministic Inequalities for Smooth M-estimators." *arxiv:1809.05172.*

7. **Kuchibhotla A. K.** and Patra R. K. (2019) "On Least Squares Estimation under Heteroscedastic and Heavy-Tailed Errors." *arXiv:1909.02088.*

8. **Kuchibhotla A. K.** (2020) "Exchangeability, Conformal Prediction, and Rank Tests" *arXiv:2005.06095.*

9. **Kuchibhotla A. K.** and Zheng Q. (2020) "Near-Optimal Confidence Sequences for Bounded Random Variables" *arXiv:2006.05022.*

TEACHING

- STAT991 – Topics in Linear Models (Fall 2017)
  — Taught half a course jointly with Lawrence D. Brown. Part of creating the course structure and lecture notes.
- STAT111 – Introductory Statistics (Summer 2018)
  — Created syllabus, course material and lectured five times a week to a class of 25 undergraduate students from various disciplines and backgrounds.

PRESENTATIONS

- Invited talk at International Seminar on Selective Inference 2020.
- Invited talk at MCP 2019, National Taiwan University.
- Invited talk at WHOA-PSI-4, 2019.
- Invited talk at JSM 2019, Denver.
- Invited talk at ICSA 2019, Nankai University.
- Invited talk at young researchers session, Lawrence D Brown memorial workshop.
- Shared a talk with Andreas Buja at WHOA-PSI-3, 2018.
- Invited talk at "Workshop Model Selection, Regularization, and Inference" 2018 (Represented Larry Brown).
- Shared a talk with Andreas Buja at SLDSC 2018.
- Invited talk at WHOA-PSI-2, 2017 (Represented Larry Brown).
- Special topics session at World Statistics Congress 2015, Rio de Janeiro, Brazil.
- Contributed session presentation at ICORS 2015, Kolkata, India.
- Contributed session presentation at ICORS 2014, Halle, Germany.
- Two seminars in Theoretical Statistics and Mathematics Unit, ISI, Kolkata on August 7 and 13, 2012 based on my project under Dr. Patankar.
- A department seminar in ISI, Chennai on July 3, 2013.

ACADEMIC
ACHIEVEMENTS

- Student travel award, Wharton Doctoral Programs, George James Term Fund 2019.
- Got second prize in Jan Tinbergen competition for young statisticians from developing countries.
- Awarded Kishore Vaigyanik Protsahan Yojana scholarship (2011–2015).
- Inspire Scholar since April 2011. (From Department of Science and Technology, India)

PROGRAMMING
AND SCRIPTING

- C – Basic Programming,
- R – Proficient,
- LaTeX– Proficient.