



Colegio de San Juan de Letran
Dominican Avenue, Abucay, Bataan
Library and Media Services

RESEARCH GUIDE: PROBABILITY AND STATISTICS

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RESEARCH GUIDES

PROBABILITY AND STATISTICS

I. SCOPE NOTE

Probability is the study of chance and is a very fundamental subject that we apply in everyday living, while statistics is more concerned with how we handle data using different analysis techniques and collection methods. [wyzant.com](https://www.wyzant.com)

II. SEARCH AIDS (BT: Broader Term, RT: Related Term, NT: Narrow Term)

BT:

- Statistics; Probability; Mathematics

RT:

- Statistical concepts
- Statistical analysis
- Center of distribution
- Discrete probability distribution
- Continuous probability distribution
- Joint probability distribution
- Sampling distribution
- Point estimation of parameters
- Statistical intervals
- Inferential statistics
- Simple linear regression and correlation
- Multiple linear regression
- Single factor experiment
- Design of experiments

NT:

- Random variables
- Cumulative distribution function
- Binomial distribution
- Poisson distribution
- Exponential distribution
- Unbiased estimator
- Variance of a point estimator
- Standard error
- Mean-squared error
- Confidence intervals
- Prediction intervals
- Tolerance intervals
- Tests of hypotheses
- Statistical inference

- Nonparametric tests
- Model adequacy checking
- Single replicate
- Addition of center points
- Blocking and confounding
- Fractional replication
- Latin-square design
- Graeco-Latin square design
- Analysis of Variance
- Random and mixed models
- General factorial design
- Response surface methodology (RSM)

III. INFORMATION RESOURCES

A. LIBRARY RESOURCES

Note: For the appropriate access credentials, please contact the Letran Bataan Library

➤ E-JOURNALS

- Statistical Papers. https://www.proquest.com/publication/publications_31177
- The Mathematical Gazette.
https://www.proquest.com/publication/publications_2035960
- Mathematical Problems in Engineering.
https://www.proquest.com/publication/publications_237775
- Biometrika. https://www.proquest.com/publication/publications_47813
- Wiley Interdisciplinary Reviews: Computational Statistics.
https://www.proquest.com/publication/publications_2034593
- Journal of American Statistical Association.
https://search.proquest.com/central/publication/publications_41715
- The American Statisticians.
https://search.proquest.com/central/publication/publications_41811
- The Journal of Applied Statistics.
https://search.proquest.com/central/publication/publications_32901
- Wiley Interdisciplinary Reviews.
https://search.proquest.com/central/publication/publications_2034593
- Statistical Papers. https://search.proquest.com/central/publication/publications_31177

➤ E-THESES

- Hoang-Nguyen-Thuy, N. (2020). On construction of two-sided tolerance intervals and confidence intervals for probability content (Order No. 27959915). Available from ProQuest Central. (2551325738). Retrieved from <https://www.proquest.com/dissertations-theses/on-construction-two-sided-tolerance-intervals/docview/2551325738/se-2?accountid=190548>

- Valentin Torres, A. H. (2020). Applicability of predictive modeling on a network enterprise risk management critical infrastructure (Order No. 28391145). Available from ProQuest Central. (2489305013). Retrieved from <https://www.proquest.com/dissertations-theses/applicability-predictive-modeling-on-network/docview/2489305013/se-2?accountid=190548>
- Altosaar, J. (2020). Probabilistic modeling of structure in science: Statistical physics to recommender systems (Order No. 27995423). Available from ProQuest Central. (2429005276). Retrieved from <https://www.proquest.com/dissertations-theses/probabilistic-modeling-structure-science/docview/2429005276/se-2?accountid=190548>
- Zimbelman, J. B. (2019). The tails of option-implied probability distributions (Order No. 27735926). Available from ProQuest Central. (2441289243). Retrieved from <https://www.proquest.com/dissertations-theses/tails-option-implied-probability-distributions/docview/2441289243/se-2?accountid=190548>
- Chauhan, R. S. (2019). Short-term traffic delay prediction at the Niagara frontier border crossings using deep learning (Order No. 13882472). Available from ProQuest Central. (2245794333). Retrieved from <https://www.proquest.com/dissertations-theses/short-term-traffic-delay-prediction-at-niagara/docview/2245794333/se-2?accountid=190548>
- Lv, S. (2019). Confidence intervals and prediction intervals for some discrete distributions (Order No. 13878818). Available from ProQuest Central. (2551170249). Retrieved from <https://www.proquest.com/dissertations-theses/confidence-intervals-prediction-some-discrete/docview/2551170249/se-2?accountid=190548>
- Liu, Z. (2018). Conditional tail dependence for bivariate copulas with applications in finance (Order No. 13421779). Available from ProQuest Central. (2161806865). Retrieved from <https://www.proquest.com/dissertations-theses/conditional-tail-dependence-bivariate-copulas/docview/2161806865/se-2?accountid=190548>
- Chen, K. T. (2016). Using LASSO to calibrate non-probability samples using probability samples (Order No. 10153157). Available from ProQuest Central. (1817403943). Retrieved from <https://search.proquest.com/docview/1817403943?accountid=190548>
- Miranda, H. L. (2011). Mathematics learning, digital resources, and the teaching and learning gap: Learning probability and statistics in Chilean elementary public schools (Order No. 3476191). Available from ProQuest Central. (894759812). Retrieved from <https://search.proquest.com/docview/894759812?accountid=190548>
- Lin, J. C. (2013). A probability based framework for testing the missing data mechanism (Order No. 3564443). Available from ProQuest Central. (1412726429). Retrieved from <https://search.proquest.com/docview/1412726429?accountid=190548>
- Chow, A. F. (2008). The effects of solution type and context on the transfer of solution to conditional probability problems for introductory undergraduate statistics students (Order No. 3338077). Available from ProQuest Central. (304379306). Retrieved from <https://search.proquest.com/docview/304379306?accountid=190548>
- Conley, Q. (2013). Exploring the impact of varying levels of augmented reality to teach probability and sampling with a mobile device (Order No. 3604529). Available from ProQuest Central. (1475262379). Retrieved from <https://search.proquest.com/docview/1475262379?accountid=190548>

B. OPEN ACCESS

➤ FREE E-BOOKS

- Nicholson, James (2018). Complete Probability Statistics 2 for Cambridge International AS and A Level (2nd ed.). Oxford: Oxford University Press. <https://www.pdfdrive.com/complete-probability-statistics-2-for-cambridge-international-as-a-level-d184783705.html>
- Linde, Werner (2016). Probability Theory: A First Course in Probability Theory and Statistics. Berlin: Walter de Gruyter. <https://www.pdfdrive.com/probability-theory-a-first-course-in-probability-theory-and-statistics-e183875448.html>
- Nicholson, James (2015). Complete Probability Statistics 1 for Cambridge International AS and A Level (2nd ed.). Oxford: Oxford University Press. <https://www.pdfdrive.com/complete-probability-statistics-1-for-cambridge-international-as-a-level-d184782256.html>
- Suhov, Yuri, Kelbert, Mark (2014). Probability and Statistics by Example. Volume 1: Basic Probability and Statistics (2nd ed.). Cambridge: Cambridge University Press. <https://www.pdfdrive.com/probability-and-statistics-by-example-volume-1-basic-probability-and-statistics-e166589935.html>
- Kobayashi, Hisashi, Mark, Brian L., Turin, William (2012). Probability, Random Processes and Statistical Analysis. Cambridge: Cambridge University Press. <https://www.pdfdrive.com/probability-random-processes-and-statistical-analysis-applications-to-communications-signal-processing-queueing-theory-and-mathematical-finance-e161961920.html>
- Rausand, Marvin, Høyland, Arnljot (2004). System Reliability Theory: Models, Statistical Methods and Applications (2nd ed.). Hoboken, NJ: John Wiley & Sons. <https://www.pdfdrive.com/system-reliability-theory-models-and-statistical-methods-wiley-series-in-probability-and-mathematical-statistics-applied-probability-and-statistics-d158632181.html>
- De Coursey, W.J. (2003). Statistics and Probability for Engineering Applications with Microsoft. Amsterdam: Newnes. <https://www.pdfdrive.com/statistics-and-probabilityfor-engineering-applications-with-microsoft-excel-d158735697.html>
- Soong, T.T. (2004). Fundamentals of Probability and Statistics For Engineers. England: John Wiley & Sons, Ltd. <https://www.pdfdrive.com/fundamentals-of-probability-and-statistics-for-engineers-d6851455.html>
- Ross, Sheldon M. (2008). Introduction to Probability and Statistics for Engineers and Scientists, 4th edition. Amsterdam: Elsevier. <https://www.pdfdrive.com/introduction-to-probability-and-statistics-for-engineers-and-scientists-d33408639.html>

➤ FREE E-JOURNALS

- Journal of Probability and Statistics. <https://www.hindawi.com/journals/jps/>
- International Journal of Probability and Statistics. <http://www.sapub.org/journal/aimsandscope.aspx?journalid=1119>
- The Open Mathematics, Statistics and Probability Journal. <https://benthamopen.com/TOSPJ/home/>

- Asian Journal of Probability and Statistics. <https://publons.com/journal/83780/asianjournal-of-probability-and-statistics/>

➤ FREE E-THESES

- Allen, M. R. (2021). Teaching Probability and Statistics in Algebra II Through Active Learning and Mathematical Discourse. (Thesis). SUNY College at Brockport. Retrieved from https://digitalcommons.brockport.edu/ehd_theses/1399
- Power, S. (2020). Exploring probability measures with Markov processes. (Doctoral Dissertation). University of Cambridge. Retrieved from <https://doi.org/10.17863/CAM.60096> ; <https://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.818264>
- Khormali, O. (2019). High Dimensional Outlier Detection. (Masters Thesis). Montana Tech. Retrieved from <https://scholarworks.umt.edu/etd/11377>
- Forgo, Vincent Z, M. (2017). A Distribution of the First Order Statistic When the Sample Size is Random. (Thesis). East Tennessee State University. Retrieved from <https://dc.etsu.edu/etd/3181>
- Peng, L. (2017). Topics in statistical inference for massive data and high-dimensional data. (Thesis). Iowa State University. Retrieved from <https://lib.dr.iastate.edu/etd/15601>
- Islam, M. J. (2015). Experimental and statistical investigation of Australian native plants for second-generation biodiesel production. (Thesis). Queensland University of Technology. Retrieved from <http://eprints.qut.edu.au/83778/>
- Karakacha, K. K. (2014). Exponential distribution: its constructions, characterizations and related distributions. (Thesis). University of Nairobi. Retrieved from <http://hdl.handle.net/11295/75516>
- Williams, J. E. (2017). An examination of the potential of secondary mathematics curriculum materials to support teacher and student learning of probability and statistics. (Thesis). University of Pittsburgh. Retrieved from <https://www.proquest.com/dissertations-theses/examination-potential-secondary-mathematics/docview/1884233998/se-2?accountid=190548>
- Seyedali, S. M. (2013). Getting a Grip on Scrap: Applying Probability and Statistics in Analyzing Scrap and Steel Composition Data from Electrical Steel Production. (Thesis). KTH. Retrieved from <http://urn.kb.se/resolve?urn=urn:nbn:se:kth:diva-165413>

C. PROFESSIONAL ORGANIZATIONS

- Bernoulli Society for Mathematics Statistics and Probability. <http://www.bernoulli-society.org/>
- International Statistics Institute. <https://www.isi-web.org/>
- Institute of Mathematical Statistics. <https://imstat.org/individual-membership/>
- American Statistical Association. <https://www.amstat.org/>
- Statistical Society for Australia. <https://www.statsoc.org.au/>

D. OTHER RELATED WEB PORTALS

- Stat Trek. <https://stattrek.com/>

- Math is Fun. <https://www.mathsisfun.com/data/>
- Seeing Theory. <https://seeing-theory.brown.edu/>
- Common Sense Media. <https://www.common Sense Media.org/lists/statistics-and-probabilityapps-games-and-websites>
- Probability Course. https://www.probabilitycourse.com/chapter2/2_3_0_chapter2_problems.php

E. RELATED RESEARCH GUIDES

- Western Michigan University. <https://libguides.wmich.edu/statistics>
- UC Santa Cruz University Library. <https://guides.library.ucsc.edu/statistics>
- The Tufts Libraries. https://researchguides.library.tufts.edu/statistics_probability
- Berkeley Library. <https://guides.lib.berkeley.edu/statistics>
- Fordham University Libraries. <https://fordham.libguides.com/MathematicsStatistics/Statistics>

IV. TUTORIALS

- Probability for Industrial Engineering. <https://www.youtube.com/watch?v=6aLr2eVP-Wg>
- Probability and Statistics. <https://www.youtube.com/watch?v=h6Nh7E6oLK8>
- Probability and Statistics. Introduction. https://www.youtube.com/watch?v=f26vt5uQ_ul&list=PLX2gX-ftPVXUWwTzAkOhBdhplvzOfByqV
- Probability and Statistics. Definition of Sets and Elements. <https://www.youtube.com/watch?v=GY86lxlWWbM&list=PLX2gX-ftPVXUWwTzAkOhBdhplvzOfByqV&index=2>
- Probability and Statistics. Definition of Sample Spaces and Factorials. <https://www.youtube.com/watch?v=WelPq6Kgf7s&list=PLX2gX-ftPVXUWwTzAkOhBdhplvzOfByqV&index=3>
- Probability and Statistics. Definition of Events. <https://www.youtube.com/watch?v=EOk25Tb-1bM&list=PLX2gX-ftPVXUWwTzAkOhBdhplvzOfByqV&index=4>
- Stat Trek. <https://stattrek.com/tutorials/probability-tutorial.aspx>
- Tutorials Point. <https://www.tutorialspoint.com/statistics/probability.htm>
- Analyze Math. <https://www.analyze-math.com/statistics.html>
- Intellipaat. <https://intellipaat.com/blog/tutorial/statistics-and-probability-tutorial/>
- Edureka. <https://www.edureka.co/blog/statistics-and-probability/>

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