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Kristin Lennox, Ph.D.

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Professional Profile

Dr. Lennox has more than fifteen years of experience in using statistics, machine learning, and operations research techniques for scientific and engineering challenges. She has applied data science in regulatory contexts, including environmental, automotive, and consumer product projects, and has testified in a variety of litigation matters, including personal injury, product liability, intellectual property, fair lending, and class action cases.

Dr. Lennox's career has included data science applications in the aerospace, construction, finance, motor vehicle, and oil and gas industries, as well as in public infrastructure, bioinformatics, software development, materials science, and manufacturing. She has worked with many varieties of data ranging from large publicly available datasets to small-scale designed experiments and specializes in combining disparate data types and sources to solve complex problems. Her expertise includes data modeling, Bayesian statistics, experimental design, and risk assessment in high-consequence environments. Dr. Lennox also studies methods to assess the benefits of emerging automotive technologies, including advanced driver assistance systems (ADAS) and automated driving.

After completing her Ph.D. in statistics, Dr. Lennox joined Lawrence Livermore National Laboratory (LLNL) where she co-founded and led the LLNL statistical consulting service. In addition to serving as a consultant on many projects, she led multidisciplinary efforts in risk assessment and radiation detection. After leaving LLNL, Dr. Lennox worked as a Principal Data Scientist for GE Aviation and multiple startups targeting artificial intelligence (AI) applications in industry. Dr. Lennox developed models and other analytics tools to support increased efficiency in manufacturing and product development, and she led development efforts for software applications to support both aerospace and chemical manufacturing.

Dr. Lennox is passionate about statistics and AI education and has presented a series of lectures for technical and lay audiences on these topics.

Academic Credentials & Professional Honors

Ph.D., Statistics, Texas A&M University, 2010

M.S., Statistics, Texas A&M University, 2007

B.S., Applied Mathematics, Texas A&M University, 2005

H.O. Hartley Award, Texas A&M University, 2022

Parzen Graduate Research Fellowship, Texas A&M University, 2009

National Merit Scholar, Texas A&M University, 2003

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Licenses and Certifications

ASQ Certified Reliability Engineer (CRE)

Prior Experience

Principal Data Scientist, Citrine Informatics, 2019-2020

Technical Head of Industrial IoT, Beyond Limits, 2019

Principal Data Scientist, Beyond Limits, 2018-2019

Principal Data Scientist, GE Aviation, 2016-2018

Director of Statistical Consulting, Lawrence Livermore National Laboratory, 2013-2016

Applied Statistician, Lawrence Livermore National Laboratory, 2010-2016

Professional Affiliations

American Statistical Association (ASA)

ASA Risk Analysis Section – Publications Officer (2024-2025)

Institute of Mathematical Statistics (IMS)

Society for Risk Analysis (SRA)

International Statistical Engineering Association (ISEA)

Conference on Data Analysis – Organizing Committee (2013-2017)

Patents

US Patent, 10,078,145: Methods and Systems for Calibration of Particle Detectors, 2018 (Wurtz R, Lennox KP).

Publications

Lennox KP, Watson HN. Chapter 1: Numbers, Statistics and Environmental Design-Making. In: Conrad, Jr. JW and Goodfellow, Jr. WL (editors). Environmental Science Deskbook. Environmental Law Series. Thomson Reuters, Eagan, MN. 2024.

Lennox KP, Scully ID, Yanes JA, Cades DM. Assessing the Impact of Driver Assistance Technology: A Review of Non-Crash and Crash Studies. Advances in Human Factors of Transportation, 2024; 148, 323-330.

Tsuji, JS, Lennox, KP, Watson, HN, & Chang, ET. Essential Concepts for Interpreting the Dose-Response of Low-Level Arsenic Exposure in Epidemiological Studies. Toxicology 2021; 457:152801.

D'Andrade B, Murphy P, Lennox KP. Internet of Things Risks. In Software Engineering: Artificial Intelligence, Compliance, and Security. New York: Nova Science Publishers. 2021; 179-235.

Lennox KP, Rosenfield P, Blair B, Kaplan A, Armendariz JR, Glenn A, Wurtz R . Assessing and

Minimizing Contamination in Time of Flight Based Validation Data. Nuclear Instruments and Methods Section A 2017; 870:30-36.

Lennox KP, Glascoe L. A Bayesian Measurement Error Model for Misaligned Radiographic Data. Technometrics 2013; 55:450-460.

Day R, Joo H, Chavan AG, Lennox KP, Chen A, Dahl DB, Vannucci M, Tsai JW. Understanding the General Packing Rearrangements Required for Successful Template Based Modeling of Protein Structure from a CASP Experiment. Computational Biology and Chemistry 2013; 42:40-48.

Cadag E, Vitalis E, Lennox KP, Zhou CLE, Zemla AT. Computational Analysis of Pathogen-Borne Metallo β-Lactamases Reveals Discriminating Structural Features Between B1 Types. BMC Research Notes 2012;. 5:96.

Lennox KP, Glascoe L. Constrained Classification for Infrastructure Threat Assessment. Proceedings of the 2011 IEEE Conference on Technologies for Homeland Security 2011; 92–97.

Chavan AG, Joo H, Day R, Lennox KP, Sukhavnov P, Dahl DB, Vannucci M, Tsai JW. Near-Native Protein Loop Sampling using Nonparametric Density Estimation AccommodatingSparcity. PLoS Computational Biology 2011. 7:e1002234.

Day, R, Lennox KP, Dahl DB, Vannucci M, Tsai JW. Characterizing the Regularity of Tetrahedral Packing Motifs in Protein Tertiary Structure. Bioinformatics 2010; 26:3059-3066.

Lennox KP, Dahl DB, Vannucci M, Day R, Tsai JW. A Dirichlet Process Mixture of Hidden Markov Models for Protein Structure Prediction. Annals of Applied Statistics 2010; 4:916-962.

Lennox KP, Sherman M. Efficient Experimental Design for Binary Matched Pairs Data. Statistics in Medicine 2009; 28:2952-2966.

Lennox KP, Dahl DB, Vannucci M, Tsai JW. Density Estimation for Protein Conformation Angles Using a Bivariate von Mises Distribution and Bayesian Nonparametrics. Journal of the American Statistical Association 2009; 104:586-596.

Mintz, BJ, Lennox KP, Wilson AK. Truncation of the Correlation Consistent Basis Sets: An Effective Approach to the Reduction of Computational Cost? Journal of Chemical Physics 2004; 121:5629-5634.

Presentations

Lennox, KP. Mathemagic! UncertaiNLP Workshop, Conference of the European Chapter of the Association for Computational Linguistics. 2024.

Lennox, KP. The Minds of Machines. Arab Artificial Intelligence Summit, Sweimeh, Jordan. 2019.

Lennox, KP. All About that Bayes. Lawrence Livermore National Laboratory, Livermore, CA. 2016.

Lennox, KP. Everything Wrong with Statistics (and How to Fix It). Lawrence Livermore National Laboratory, Livermore, CA 2015.