

Exponent®
Engineering & Scientific Consulting

Thomas Brown, Ph.D.

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Professional Profile

Dr. Brown provides statistical consulting services related to defect investigations, reliability engineering, statistical modeling, data analysis, data visualization. His experience includes design and analysis of sampling studies, automotive crash and injury statistics, measurement system analysis, warranty claims, manufacturing data, medical devices, environmental data, health outcomes data.

Dr. Brown works with engineers to design studies and analyze data to assess the condition of units in a population. Applications include construction materials, consumer products, motor vehicles, financial transactions, solar panels. His reports have involved data from engineering investigations, observational studies, accident and injury databases, warranty claims, complaint data, point-of-sale data.

Dr. Brown has expertise in harvesting and cleaning large volumes of data files with various formats (Microsoft Word, txt, pdf, csv, Microsoft Excel), and gathering data through web scraping. He has expertise in textual analysis to identify conditions expressed in narratives. He has experience with NHTSA datasets including recalls, owner complaints, investigations, NASS CDS/CISS, NASS GES/CRSS, and FARS. He is highly proficient with statistical computing programs R, JMP, and SAS. He also has experience with MATLAB, Python, Weibull++, Minitab, and Tableau.

Before joining Exponent, Dr. Brown attended the University of Michigan where he served as a graduate student consultant at the center for statistical consultation and research (CSCAR). His thesis research is on the analysis of spatial data in a Gaussian framework.

Academic Credentials & Professional Honors

Ph.D., Statistics, University of Michigan, Ann Arbor, 2014

M.A., Statistics, University of Michigan, Ann Arbor, 2012

B.S., Mathematics, University of Rochester, 2008

Licenses and Certifications

ASQ Certified Reliability Engineer

Six Sigma Green Belt Certification (CSSGB)

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Professional Affiliations

American Statistical Association

American Society for Quality – ASQ

Society of Automotive Engineers – SAE

Publications

M. Davis, C. Mkandawire, T. Brown, S. Pasquesi. Incidence and Mechanism of Head, Cervical Spine, and Lumbar Spine Injuries for Occupants in Low- to Moderate-Speed Rear-End Collisions. SAE Technical Paper, 2021-01-0900, 2021.

M. Davis, C. Mkandawire, T. Brown, S. Pasquesi. Incidence and Mechanism of Head, Cervical Spine, Lumbar Spine, and Lower Extremity Injuries for Occupants in Low- to Moderate-Speed Frontal Collisions. SAE Technical Paper, 2021-01-0902, 2021.

Yaek, J., Brown, T., and Goertz, A., "Accident Statistical Distributions from NASS CDS - An Update," SAE Technical Paper 2020-01-0518, 2020.

Hsing, Tailen; Brown, Thomas; Thelen, Brian. Local intrinsic stationarity and its inference. Ann. Statist. 44 (2016), no. 5, 2058--2088.

Presentations

Soderborg N., Brown T., Acceptance Sampling: A Tutorial, American Society for Quality Lean and Six Sigma Conference, Phoenix AZ, February 25, 2025.

Soderborg N., Brown T., Practical Principles for Test Planning and Sampling, American Society for Quality Lean and Six Sigma Conference, Phoenix AZ, February 27, 2023.

Soderborg N., Brown T., Gage R&R Re-examined: When is a measurement system acceptable? American Society for Quality Lean and Six Sigma Conference, Phoenix AZ, March 1, 2022.

Soderborg N., Brown T., Telling Effective Stories with Quality Dashboards, Quality 4.0 Summit, Virtual Conference, September 29, 2020.

Soderborg N., Brown T., Operational and Analytic Dashboards: Visualizing Complex Organizational Data. American Society for Quality, Quality 4.0 Summit, Dallas TX, November 19, 2019.

Brown, T. Assessing the Agreement of Multiple Measurement Systems. Presentation, Spring Research Conference, Chicago, IL, May 27, 2016.

Brown, T. How to analyze spatial data of different types. Presentation, American Statistical Association Meeting, Detroit, MI, January 12, 2016.

Peer Reviews

The Annals of Statistics