

## **INTRODUCTION TO ROAD SAFETY MODELLING**

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Overview of road safety analysis; elements of crash data; review of concepts of probability and statistics (discrete and continuous distribution, law of total variance, Bayes' rule, sample means/variances, correlations); linear regression (estimation, model selection, impact of violations of assumptions); count data models (poisson/negative binomial regression, extensions); hotspot identification methods; analysis; expansion and modeling of traffic counts; before-after studies; overview of machine learning application in safety analysis; surrogate safety assessment; emerging trends in road safety analysis.