One Size Fits All? Different Applications of AVMs

Automated valuation models (AVMs) are used in practice for several reasons. For example, valuations of individual properties are needed by local governments for levying property taxes, for mortgage applications by banks, or for commercial real estate investment decisions. Valuations of portfolios of properties are used by banks and investors for risk management or for the construction of constant quality price indices by national statistical offices.
AVMs use a variety of methods, ranging from traditional methods such as automated comparable sales methods, more statistical approaches such as hedonic pricing models, to fully data-driven machine-learning approaches.
This presentation examines how the valuation goal affects the choice of methods for an AVM, with a special focus on machine learning algorithms. This involves the following properties: underlying model assumptions, noise versus lag trade-off, consistency of valuations, ease of implementation, flexibility in adding extra variables and dealing with missing values, explainability and prediction intervals

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