Abstract: Instrumental variable methods may provide consistent estimation of parameters in the presence of confounding. They leverage structural assumptions to achieve this, assuming that certain observed variables are exogenous. Instrumental variable methods are found in econometrics, statistics, and engineering sciences. However, the standard formulations of the instrumental variable framework differ between these fields as they take different data-generating structures as starting points.

In this talk, we'll provide a very brief overview of instrumental variable methods spanning the above fields. We will then introduce a new instrumental variable method by extending the theory of so-called auxiliary instrumental variables to the time series setting. We argue that this is a useful technique in control engineering as well as in other fields using time series models.