Research Statement

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My research is situated at the intersection of technology and business & society.[1] Theory or structured knowledge is methodologically central to all my quantitative modeling. Given my background and training in engineering, economics and marketing, I am interested in two areas.

(A) *Digital business models:* My research focuses on distinct strategic long-run choices relevant to digital firms, a topic of interest to multiple fields. I study this area using methods based on microfoundations of agents' preferences, typically empirical structural models. These models yield economically interpretable estimates, enabling counterfactual evaluation of firm or regulatory policies, and exogenous changes in technology.

(B) Building *theory-based machine learning (ML)* methods incorporating structured knowledge developed from first principles. These methods are human interpretable, and provide representations satisfying desirable properties (e.g. monotonicity of learned demand curves).

For more details, please see the longer version at the link below:

https://vineetkumars.github.io/ResearchStatement20240916.pdf

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[1]For simplicity of exposition, this document is written in the first person singular, although most of my work is in collaboration with a wonderful set of co-authors.