Three pipelines that have been driving my research are *Management Science, Engineering* and *Finance*. The last two are associated with my graduate study in Mathematics and Engineering. Currently, I am mainly focusing on Management Science.

My current research is featured with wide cooperation with several senior faculties from different disciplines. I have a broad range of research interest in the area of strategy management, Supply Chain Management, inventory management, and revenue management. My research has two major topics associated with inventory systems: **Assemble to order** and **Make to stock**. For the assemble-to-order topic, one paper regarding the acyclic supply chain is now in the 3rd round review of *Naval Research Logistics* and the other one regarding the value of component communality (with Y. Zhao) is now in process. For the make-to-stock topic, I am working on the formulation and computation of inventory costs (long-run average cost and discounted cost) as the objective function in the optimization of production-inventory system parameters. One paper (with Prof. M. N. Katehakis) regarding the time-average cost optimization and the other one (with Prof. B. Melamed) regarding the discounted cost optimization are now in process. These two form the major part of my dissertation. Some other on-going research is in the interface between Supply Chain Management and Finance. A related topic I am working on is to apply martingale approach to valuate inventory penalty functions. In addition, I have my own independent research topic, which is about the inventory optimization and stock-out risk control with the aid of the ruin and renewal theory. This paper is now under review of *EJOR*.

For my future research, several topics are leading the way via extending from my on-going work. In addition to these existing topics, here are some new topics glinting in my mind.

1. Risk control in supply chain and inventory; product warranty design and management;
2. Some interdisciplinary topics between finance and supply chain management, for example future and its inventory management. The underlying price for the product or future is
assumed to be an exponential Brownian motion. The objective is to price the future under given inventory constraints, or vice versa;

3. Inventory management for substitutable products. At gasoline station, for example, premium, plus and regular gas can be two-way or one-way substituted with others;

4. Comprehensive optimization of inventory management with multiple objective functions
   a. service level for demand satisfaction;
   b. system stabilization, e.g., capacity control;
   c. inventory cost;

5. Supply chain in health care industry.

Some of aforementioned topics need essential cooperation with senior colleagues from industry and academia. I will be open to any opportunity to co-author papers and look forward to any chance to apply for research grants and funding.