

## Proposal

**Title:**

### **A Systematic Literature Review of Machine Learning in Dynamic Pricing**

#### **1 Introduction**

Dynamic pricing is a price strategy where prices of goods are continuously adjusted according to the current market situation to maximize the revenue. While the abundance of sales data provided by online business has long been viewed as a fundamental part of this optimization process, it was not until the recent surging of machine learning techniques could such data be thoroughly utilized. Considering the powerful analysis ability of machine learning, its combination with dynamic pricing may indeed provide key competitiveness to vendors today.

#### **2 Question and Contents**

The question that this research wants to answer is, by now, what has been done in the field of dynamic pricing with machine learning approaches?

The literature on application of machine learning in dynamic pricing has grown rapidly in recent years, with various theory approaches and different practical deployment. However, by now, there is still no comprehensive literature review on this specific topic. To fill this gap, this survey mainly aims at summarizing these existing machine learning approaches in the field, and at highlighting their merits. We would also count the number of papers related to each approach and briefly exam some of their deficiencies for support.

#### **3 Methodology**

We would use Google Scholar to find all relevant literature that are available online July 1, 2022. Multiple versions and largely overlapping sources would be excluded. We would also look for other works citing these papers with the same method.

#### **4 Supervision Arrangement**

Timeline of the research: 11/07/22 – 21/08/22

Periodic meetings (preferably in f2f mode) will be held for discussion and supervision. The specific time and details are subject to further arrangement.