TITLE: RETAIL STORE STOCK INVENTORY ANALYTICS

DOMAIN: DATA ANALYTICS

TEAM ID: PNT2022TMID23044

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PROBLEM DEFINITIONS

The forecasting problem in this research is to predict the demand for each product in each outlet of the case company. The short-term demand forecast is used for distributing the products from the central warehouse to the outlets in the most profitable way, but not for determining the optimal buying quantity. In fact total product quantities are assumed to be fixed for this problem since products are only bought once in a single tranche prior to the selling period according to the outcome of a long-term forecasting process which is not discussed in this research.

JOURNAL 1

Authors:

- ✓ Bernat Gastón
- ✓ Sergio López-Soriano
- ✓ G.Marrocco

Paper Title:

- ✓ A simple solution to locate groups of items in large retail stores using an RFID robot

Journal Name:

- ✓ IEEE transactions on industrial informatics

Published Month: May

Published Year: 2021

OBJECTIVE

- ✓ This article presents a simple solution to estimate the location of products in a retail store, using an autonomous ground robot with a radio frequency identification payload.
- ✓ The model used and explained in this article is designed to be as simple and versatile as possible, while achieving accurate location estimations when compared with other proposed models in the state of the art.
- ✓ The research results are obtained from experiments of the model in different environments, achieving accurate location estimations in a controlled laboratory environment. Moreover, for the first time, the model has been tested in a large retail store, where the results obtained met the requirements of the store owners.

CRITICAL THINKING

MERITS

DE-MERITS

JOURNAL 2

- **Authors:**
  - ✓ V.Aruna
  - ✓ A.Abdul Gafoor
- **Paper Title:**
  - ✓ Foreign direct investment(FDI) in the multi-brand retail sector
- **Journal Name:**
  - ✓ IEEE

Published Month: June

Published Year: 2012

OBJECTIVES

- ✓ Retailing in India is one of the pillars of its economy and accounts for about 15 percent of its GDP. Organised retailing is absent in most rural and small towns of India. Supermarkets and similar organized retail stores account for just 4 percent of the market.
- ✓ Retailing in India is one of the pillars of its economy and accounts for about 15 percent of its GDP. Organised retailing is absent in most rural and small towns of India. Supermarkets and similar organized retail stores account for just 4 percent of the market.
- ✓ single-brand retail was limited to 51 percent ownership with government approval. But now, the government continues the hold on retail reforms for multi-brand stores. There are some, who are in favour of the entry of FDI in multi- brand retail in India and some against it. This paper analyses all the views and presents a clear picture.

CRITICAL THINKING

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JOURNAL 3

Authors:

- ✓ Christopher Simms
- ✓ Jahangir Wasim
- ✓ Sercan ozcan

Paper title:

Technology roadmapping using text mining:a foresight study for the retail industry

Journal name:

IEEE Transactions on engineering management

Published month:April

Published year: 2021

OBJECTIVES

- Technology roadmapping is a widely accepted method for offering industry foresight as it supports strategic innovation management and identifies the potential application of emerging technologies. While roadmapping applications have been implemented across different technologies and industries, prior studies have not addressed the potential application of emerging technologies in the retail industry.
- we used a sequential method that consisted of both text mining and an expert review process. Our results show clear directions for the future of emerging technologies as the industry moves toward unmanned retail operations. We generate eight clusters of technologies and integrate them into a roadmapping model, illustrating their links to the market and business requirements
- Our study has a number of implications and identifies potential bottlenecks between the integration of front- and back-end solutions for the future of unmanned retailing.

CRITICAL THINKING

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JOURNAL 4

Authors:

- ✓ Movinda rupasinghe
- ✓ Millinda perera
- ✓ Samantha thelijjagoda

Paper Title:

- ✓ Analysing the location feasibilityfor retail business using market location factors

Journal Name:

- ✓ 2018 IEEE International conference on information and automation for sustainability

Published Month: December

Published Year: 2018

OBJECTIVES

- The purpose of this study is to define a method and develop a system to analyze the feasibility of a selected location for a retail store. The factors used in this method are location and market factors of a selected area.
- In order to define and test the method, we selected three different areas and five different retail store types. To retrieve location data, we used Google Maps web service. Consumer surveys were conducted in selected areas to get information about consumers' shopping patterns and selections.
- The findings of this study and the method described is useful in deciding the feasibility of any given location for a retail outlet. Also the specified method and model can be modified and extended to analyze different kinds of business locations.

CRITICAL THINKING

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JOURNAL 5

Authors:

- ✓ Stephen mahar
- ✓ P.Daniel wright

Paper Title:

In-store pickup and returns for a dual channel retail

Journal Name:

IEEE Transactions on engineering management

Published Month: April

Published Year: 2017

OBJECTIVES

- This paper develops a mathematical model for analytically examining the cost and value of providing in-store pickup and return options in multi-echelon retail/e-tail organizations.
- In this light, the model determines the optimal subset of a retailer/e-tailer's stores that should be set up to handle in-store pickups and online returns under stochastic channel demands. Computational results show that optimizing the set of pickup and return locations can reduce system cost by up to 20% on average over arbitrarily enabling all stores with Internet pickup/return capabilities, and firms can substantially increase customer value while maintaining cost minimization as an important selection criterion in choosing pickup and return locations.

JOURNAL 6

Authors:

- ✓ Gino marchet
- ✓ Marco melacini
- ✓ Monica rasini
- ✓ Elena tappia

Paper Title:

- ✓ Logistics in omni- channel retailing –Modelling analysis of three distribution configuration

Journal Name:

- ✓ IEEE International conference on service operations and logistics and informatics

Published Month: September

Published Year: 2017

ABSTRACT

- With millions of students/employees browsing course information and job postings everyday, the need for accurate, effective, meaningful, and transparent course and job recommender systems is more evident than ever. The current recommendation research has attracted wide attention in the academic and industrial areas. However, existing studies primarily focus on content analysis and user feature extraction of courses or jobs and fail to investigate the problem of cross-domain data integration between career and education.
- At the same time, it also fails to fully utilize the relations between courses, skills, and jobs, which helps to improve the accuracy of the recommendation. Therefore, this study aims to propose a novel cross-domain recommendation model that can help students/employees search for suitable courses and jobs. Employing a heterogeneous graph and community detection algorithm, this study presents the graph-community-enabled(gce) model that merges course profiles and recruiting information data.
- Specifically, to address the skill difference between occupation and curriculum, the skill community calculated by the community detection algorithm is used to connect curriculum and job information. Then, the innovative heterogeneous graph approach and the random walk algorithm enable cross-domain information recommendation. The proposed model is evaluated on real job datasets from recruitment websites and the course datasets from moocs and higher education. Experiments show that the model is obviously superior to the classical baselines. The approach described can be replicated in a variety of education/career situations.

JOURNAL 7

Authors:

- ✓ Viktor P Semenov
- ✓ Vladimir V Chernokulsky

Paper Title:

- ✓ Research of Artificial intelligence in the retail management problem

Journal:

- ✓ IEEE II International conference on control in technical system

Published Month: October

Published Year: 2017

ABSTRACT

- Nowadays the term `cloud computing' is becoming as an imperative element for any organizational setup. In this paper, we recommend a service based cloud model to meet the education oriented technological needs of academic institutions in middle east.
- In this new globalized economy, academic institutions must provide high quality teaching-learning infrastructure to prepare students for the growing challenges of the 21 st century
- Therefore, this study will help in the improvement of the current educational system and it will balance the requirements of the industrial jobs. Multi-campus institutions or institutions under government can make use of this as part of their professional tie-up to share knowledge, resources and to upgrade skills by reducing the gap between the academic curriculum and industrial standards.

Authors:

- ✓ Viktor P Semenov
- ✓ Vladimir V Chernokulsky

Paper Title:

- ✓ Research of Artificial intelligence in the retail management problem

Journal:

- ✓ IEEE II International conference on control in technical system

Published Month: October

Published Year: 2017

ABSTRACT

- There has been a sudden boom in the technical industry and an increase in the number of good startups. Keeping track of various appropriate job openings in top industry names has become increasingly troublesome. This leads to deadlines and hence important opportunities being missed.
- Through this research paper, the aim is to automate this process to eliminate this problem. To achieve this, Puppeteer and Representational State Transfer (REST) APIs for web crawling have been used. A hybrid system of Content-Based Filtering and Collaborative Filtering is implemented to recommend these jobs.
- The intention is to aggregate and recommend appropriate jobs to job seekers, especially in the engineering domain. The entire process of accessing numerous company websites hoping to find a relevant job opening listed on their career portals is simplified.
- The proposed recommendation system is tested on an array of test cases with a fully functioning user interface in the form of a web application. It has shown satisfactory results, outperforming the existing systems. It thus testifies to the agenda of quality over quantity.

JOURNAL 9

Authors:

- Nikolas Dawson
- Marian-Andrei Rizoiu
- Mary-Anne Williams

Paper Title:

- Skill-driven recommendations for job transition pathways

Journal Name:

- PLOS ONE

Published Month: August

Published Year: 2021

ABSTRACT

- Job security can never be taken for granted, especially in times of rapid, widespread and unexpected social and economic change. These changes can force workers to transition to new jobs. This may be because new technologies emerge or production is moved abroad perhaps it is a global crisis, such as COVID-19, which shutters industries and displaces labor en masse. Regardless of the impetus, people are faced with the challenge of moving between jobs to find new work. Successful transitions typically occur when workers leverage their existing skills in the new occupation.
- Here, we propose a novel method to measure the similarity between occupations using their underlying skills. We then build a recommender system for identifying optimal transition pathways between occupations using job advertisements data and a longitudinal household survey.
- Our results show that not only can we accurately predict occupational transitions (accuracy = 76%), but we account for the asymmetric difficulties of moving between jobs. We also build an early warning indicator for new technology adoption, a major driver of rising job transitions.

JOURNAL 10

Authors:

- Cheng Yang
- Yingya Zhang
- Zhixiang Niu

Paper Title:

- A Research of Job Recommendation System Based on Collaborative Filtering

Journal Name:

- IEEEXplore

Published Month: December

Published Year: 2014

ABSTRACT

- Dealing with the enormous amount of recruiting information on the Internet, a job seeker always spends hours to find useful ones.
- To reduce this laborious work, we design an d implement a recommendation system for online jobhunting. In this paper, we contrast user-based and item-based collaborative filtering algorithm to choose a better performed one.
- We also take background information including students' resumes and details of recruiting information into consideration, bring weights of co-apply users (the users who had applied the candidate jobs) and weights of student used liked jobs into their commendation algorithm.
- At last, the model we proposed is verified through experiments study which is using actual data.

CRITICAL THINKING

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