

CHAPTER 11

A STUDY ON FACTORS INFLUENCING CONSUMER PERCEPTION TOWARDS METHOD OF PAYMENT IN ONLINE SHOPPING: AN EMPIRICAL STUDY WITH REFERENCE TO NORTH BENGAL REGION, WEST BENGAL

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ABSTRACT

Online shopping is not only a platform for selling goods electronically, but it is also to increase the volume of sale by adopting different strategies of promotion. Not only at the time of setting up an online store, but while running the online business, the e-business houses must also plan towards such strategies like Website Display, Ease of finding goods, Comparability among goods, Specification of product, Return policy, Method of payment, reviews from customer etc. Among these, selection of the right type of payment method by e-Commerce business houses is a very essential strategy. It can be considered as a critical step for achieving profitability and success.

The present study focuses on the factors influencing the consumer perception towards method of payment in online shopping.

Keywords: Commerce, Profitability, Perception, Online shopping.

JEL Code: M310

INTRODUCTION

The present scenario of Indian economy is not good due to Covid19 pandemic. Consequent to lock down, physical form of market has badly been affected at a large scale since common people were not allowed to go outside the time limit fixed by the State. Shops were to be opened with restricted number of employees. Because of this, common people have moved towards online e-retail stores. Now, as we know Indian consumers are already using online platform to buy their product, now more of the people joined the online consumer community. According to Pioneer report, the Indian e-commerce sector is ranked 9th in growth in the world. Indian e-commerce is expected to increase from 4% of the total food and grocery, apparel and consumer electronics retail trade in 2020 to 8% by 2025.



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Probabilistic Estimation of COVID-19 Using Patient's Symptoms

Sumit Banik, Sagar Banik, Aniket Ghosh & Anupam Mukherjee

Conference paper | First Online: 07 April 2021

426 Accesses | 2 Citations

Part of the Studies in Autonomic, Data-driven and Industrial Computing book series (SADIC)

Abstract

COVID-19 is a viral infectious disease that originated from Hubei Province being Wuhan as the central outbreak point. This paper proposes a model where the probability of getting infected will be derived from the person's symptoms. The prediction is very much required to understand the interdependencies of the category of symptoms responsible for the infection. For this work, we used various algorithms for the classification like logistic regression, naïve Bayes, random forest, linear support vector classifier, and decision tree. The performance metrics of various algorithms were compared, and the successful method was discussed. The approximate mean accuracy score using these algorithms was found to be 78%.

Keywords

- COVID-19
- Supervised learning
- Decision tree
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Chapter 10

An Intelligent System for Securing Network From Intrusion Detection and Prevention of Phishing Attack Using Machine Learning Approaches

Sumit Banik Sagar Banik, Anupam Mukherjee

Book Editor(s): Rajdeep Chakraborty, Anupam Ghosh, Jyotsna Kumar Mandal

First published: 03 December 2021 | <https://doi.org/10.1002/9781119764113.ch10>

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Summary

Phishing attacks are one of the most popular attacks in compromising user's data and performing malicious activities. It was discovered during the mid-1990s, and to this present day, it is one of the severe cybercrime methods to hijack user's data. This is a serious issue as people still fall for the trap of logging into a phished website and giving out all the details which result in loss of bank balance, getting their files breached, and also the hacker trying to impersonate the person at a maximum level. Many algorithms are proposed to counter this attack. Various machine learning approaches are used to employ and check the detection of phishing websites. The problem is that there is no existing analysis at a detailed level about the URLs, the type of domains, origin, and other important aspects. To date, there is no exact way of saying whether a website is genuine or phishing related but the study of the website pattern and its structure will play an important role in dealing with the detection. In this study, we propose the estimation of the phishing websites and put in a detailed analysis comparing pre-existing malicious URLs which will help to filter the websites effectively and create a comparison of all the attributes in them. The advantages, drawbacks, and the comparison with the pre-existing research on this field have been discussed.



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References

Investigations on Low birefringent Liquid Crystalline Materials for High Information Content Displays

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Abstract:

The physical properties in the nematic phase of six non-polar alkenyl liquid crystalline compounds having same bicyclohexane core differing in the terminal chains has been investigated from optical birefringence and dielectric permittivity measurements. Low optical birefringence is reported in these compounds. The structure property correlation in the light of optical as well as dielectric anisotropy has been elucidated. The birefringence data has been determined from high resolution optical transmission (OT) method and thin prism method and the two sets of values are found to be in good agreement with a small deviation of about 2–3%. Orientational order parameter in the nematic phase has been determined directly from OT and also using Vuks Internal field model. It has been found that temperature dependent behavior of these two sets of order parameters agree quite well up to 10°C below the nematic-isotropic transition and deviates on the average around 2% far from the clearing temperature. Possible cause for this discrepancy has been discussed. These low birefringent materials find important application in commercial mixtures applicable for high information content display devices.

Keywords: Liquid crystals, Bicyclohexane compounds, Birefringence, Optical transmission, Orientational Order parameter.

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1. Introduction

Liquid crystal material research has contributed significantly both to the development of liquid crystal display (LCD) technology [1-2] as well as to a deeper understanding of soft condensed matter systems. Quantitative knowledge of orientational ordering is necessary so that improved materials may be devised for applications. Study of pure compounds is also an important prerequisite in the preparation of mixtures, better tuned to meet the specific demands of the electro-optical display devices. The compounds studied in this work are of extraordinary interest since they contain bicyclohexane core, uncommon to most liquid crystalline compounds. They belong to a separate class of liquid crystals, expected to show low optical anisotropy ($\Delta n < 0.1$), low rotational viscosity, low magnetic and dielectric anisotropy ($\Delta\chi \approx 0$, $\Delta\epsilon \approx 0$) [3] and low visco-elastic ratios leading to faster response times in field effect liquid crystal displays. The results of refractive indices (n_o and n_e) and dielectric permittivity ($\epsilon_{||}$ and ϵ_{\perp}) measurements on six alkenyl bicyclohexane compounds of which four compounds show only nematic phase while



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Conduction process in some promising lithium-ion doped glassy ceramics

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ABSTRACT

A novel glassy ceramic, $0.3\text{Li}_2\text{O}-(0.7)(0.5\text{MoO}_3-0.4\text{V}_2\text{O}_5-0.1\text{ZnO})$ has been developed using the melt quenching technique. The temperature and frequency dependency of ionic conductivity has been established, following Almond-West formalism and Jonscher's universal power law respectively. The thermally activated nature of the sample can be exposed by its DC conductivity (σ_{dc}) study. The effect of composition on hopping frequency and corresponding activation energy has been calculated. The plateau (conductivity dependent on frequency) region in the lower frequency zone is pronounced by the sub diffusive movements of conducting Li^+ ions. Whereas, in the dispersive high-frequency zone, Li^+ ion migration in a pseudo-three-dimensional space is the main reason for conductivity in percolating networks.

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1. Introduction

Mechanical and electrical conduction properties of glass-nanocomposites are the focus of research interest in recent times [1]. Important findings regarding the origin of enhanced electrical and mechanical properties of these glass-nanocomposite materials with respect to their bulk crystalline counterparts [1] are the main motives behind this interest. The comparison between electrical conduction and structural properties of so far available literature [1] leads to scientific efforts towards the development of suitable and improved materials for various engineering practices. Present work conveys the development of a lithium ion-based glassy system using conventional melt quenching technique and elucidates its electrical transport properties such as ionic conductivity, activation energy, hopping frequency, etc. Lithium is mostly used and a significant component of super-capacitor and rechargeable batteries in a recent era with a promise of renewable energy storage [2–4]. Rechargeable batteries are the most eminent part of the utmost daily needs of human beings for examples smartphones, supercomputers, electric vehicles, etc [2–4]. The accountability towards the product zero expansion makes lithium mandatory for every glass

ceramic, which further ensures its voltage breakage-free use in high-temperature ranges [5]. The amalgamation of appropriate metal ions such as vanadium and molybdenum, improves the thermal stability, electrical properties and chemical unresponsiveness of the glassy system [6].

To enlighten the conduction mechanisms in ionic lithium conductors as well as the conductivity spectra, the employment of the power-law model by Jonscher [7,8] is being used. The entire conductivity of an ionic lithium conductor can be demonstrated by this model as:

$$\sigma(\omega) = \sigma_0 + A\omega^S \quad (1)$$

In the above-mentioned equation, σ_0 represents the conductivity in the lower frequency section (DC conductivity), A can be given as pre-factor and S can be explained as the exponent of frequency respectively. The spectrum of conductivity of the recent work at various temperatures can be analyzed by employing Almond-West formalism (9):

$$s(w) = s_{dc}[1 + (w/w_H)^n] \quad (2)$$

Here, the major three components are σ_{dc} (DC conductivity), ω_H (hopping frequency), and n (fractional power-law exponent). The fitting of experimental data of conductivity using Eq.2 should explore adequate knowledge of the conduction behaviour [7].

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Comparison Between Some Glassy Systems and Their Heat-Treated Counterparts

[Aditi Sengupta](#), [Chandan Kr Ghosh](#) & [Sanjib Bhattacharya](#)

Chapter | [First Online: 02 October 2022](#)

127 Accesses

Abstract

Li₂O-doped glass-nanocomposites and crystalline counterparts have been developed. Microstructural study reveals the distribution of Li₂Zn₂(MoO₄)₃, ZnMoO₄, Zn(MoO₂)₂, Li₂Mo₆O₇ and Li₂MoO₃ nanorods in the glassy matrices. Crystalline counterparts exhibit enhancement in crystallites sizes. The ionic conductivity is found to be function of frequency and temperature. Flat conductivity at a low-frequency regime indicates the diffusional motion of Li⁺, whereas the "higher frequency dispersion" may correspond to a correlated and sub-diffusive motion. As the crystalline counterpart is formed by controlled heating, ZnSeO₃ chain structure is expected to break by increasing dimensions of molybdate rod-like structures.

Keywords

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TLBO Optimised PID Controller for Coordinated Control in a Hybrid AC/DC Microgrid

Publisher: IEEE

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Abstract:

Due to the increasing penetration of renewable energy sources (RES), frequency regulation has become more challenging. In electrical power network, the load frequency control (LFC) mechanism is a very crucial function for keeping an equilibrium between the power generation and load to avoid frequency deviation (FD). The paper aims to implement an effective LFC scheme for a hybrid AC/DC microgrid (MG) system comprising of wind turbine generator (WTG) and battery energy storage system (BESS). Proportional integral double derivative (PID) controllers are used to implement the LFC scheme. The controller parameters are computed using a teaching-learning-based optimization (TLBO) algorithm. The responses acquired using PID controllers are compared with the responses obtained using Proportional integral (PI) and Proportional integral derivative (PID) controllers. A critical analysis reveals that the PID controller shows better dynamic responses in terms of settling time and magnitude of oscillations compared to the PI and PID controllers. Furthermore, the robustness of the proposed PID based LFC scheme is ascertained under different system loadings.

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Predictive Geospatial Crime Data Analysis and Their Association with Demographic Features Through Machine Learning Approaches

[Anupam Mukherjee](#) [✉] & [Anupam Ghosh](#)

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Abstract

Crime is a socioeconomic issue that has a negative impact on life quality and economic progress. By identifying crime trends, we will be able to handle difficulties with unique strategies in different criminal categories and improve societal security. This research focuses on the Vancouver crime dataset, with the goal of analyzing and predicting crimes in states using machine learning algorithms. In this work, we develop a model that can be used to estimate the number of crimes committed by category in a given state. Machine learning algorithms have exploded in popularity, making crime prediction possible based on historical data. This work mainly creates ensembled models that perform significantly better results with respect to stability, accuracy and provide more accurate forecasting results compare to the existing algorithms. If we follow data decomposition techniques based on district-wise accuracy rate then the result will outperform the existing methodologies. Geo-spatial crime data analysis is another significant aspect of this work.

Keywords

[Geo spatial heat map](#) [Regression](#) [Random forest](#) [Gradient boost](#) [Naive Bayes](#)

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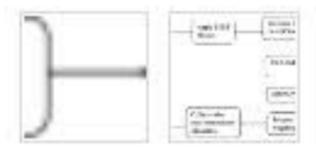
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Chapter 9 - Recent trends in recommendation systems and sentiment analysis

Sutapa Bhattacharya^a, Dhruvasish Sarkar^b, Dipak K. Kole^c, Premananda Jana^d

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Abstract

With the rise of technology, anyone can easily share their sentiments through social media platforms like Facebook, Twitter, LinkedIn, Google+, and Instagram. Sentiment analysis is a technique that categorizes opinions from pieces of text to determine a sentiment score (positive, negative, or neutral). Recommendation systems usually aim to match user patterns by finding similar users or different users according to their sentiment scores. Sentiment analysis is dependent on machine learning- or lexicon-based approaches.

The following study is an attempt to enlighten how sentiment analysis approaches can be used to improve the outcomes of recommender systems. In the introduction, the basic concepts and terms related to sentiment analysis and recommendation systems are described. Next, we provide an overview of the different aspects of sentiment analysis. Recent developments and related works are discussed subsequently. In this research, we propose a combination of a BERT model and an S3VM classifier using a collaborative recommendation architecture for getting good accuracy. The last part of the chapter discusses challenges and future research directions in this area presents the conclusion.

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