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Accepted Papers

ENHANCING PERSONALIZED RECIPE RECOMMENDATION THROUGH MULTI-CLASS CLASSIFICATION

Harish Neelam and Koushik Sai Veerella, Michigan State University, East Lansing, Michigan, USA

ABSTRACT

This paper aims to address the challenge of personalized recipe recommendation in the realm of diverse culinary preferences. The problem domain involves recipe recommendations, utilizing techniques such as association analysis and classification. Association analysis explores the relationships and connections between different ingredients to enhance the user experience. Meanwhile, the classification aspect involves categorizing recipes based on user-defined ingredients and preferences. A unique aspect of the paper is the consideration of recipes and ingredients belonging to multiple classes, recognizing the complexity of culinary combinations. This necessitates a sophisticated approach to classification and recommendation, ensuring the system accommodates the nature of recipe categorization. The paper seeks not only to recommend recipes but also to explore the process involved in achieving accurate and personalized recommendations.

KEYWORDS

Data Mining, Ingredients, Association rules, Classification, Recommendations, Recipes, Apriori, FP Growth, Networks, Similarity Scores, Filtering.

SECURING DIGITAL IDENTITIES: THE SYNERGY OF INFORMATION TECHNOLOGY SECURITY, TRUST, AND PRIVACY

Damodar Selvam, Independent Researcher, USA

ABSTRACT

The convergence of information technology (IT) security, trust, and privacy has emerged as a fundamental paradigm in the digital era, especially concerning the management of digital identities. This paper explores the complex interplay among these spheres, explaining how their fusion can bolster the safeguarding of digital identities. By analysing current patterns, technological progress, and prevailing obstacles, the article seeks to offer a thorough comprehension of the convergence and its consequences. The results underscore efficient tactics and frameworks that enrich the security, reliability, and confidentiality of digital identities, ultimately fostering more resilient digital environments.

KEYWORDS

Digital Identity, Blockchain Security, Biometric Authentication, Homomorphic Encryption.

HASTE MAKES WASTE: A MODERATED MEDIATION MODEL OF THE MECHANISMS LINKING ARTIFICIAL INTELLIGENCE ADVANCEMENT TO FILM FIRM PERFORMANCE

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ABSTRACT

Artificial intelligence (AI) has emerged as a transformative force in the modern film industry, revolutionizing production processes and redefining audience experiences. This study delves into the mechanisms through which AI advancement impacts film firm performance, with a focus on the mediating roles of innovation speed and quality, and the moderating effect of human-machine collaboration. Employing a resource-based view, we construct a moderated mediation model and analyze data from 355 global film firms. Our findings reveal that AI advancement positively influences film firm performance, with innovation quality serving as a significant mediator. However, the mediating role of innovation speed is not pronounced. Moreover, the degree of human-machine collaboration positively moderates the relationships between AI advancement and both innovation speed and quality. However, its moderating role between AI advancement and firm performance is not significant. The study underscores the theoretical and practical implications of utilizing advanced AI to foster innovation and competitive advantage in film firms.

KEYWORDS

AI advancement, innovation speed, innovation quality, human-machine collaboration, film firm performance.

TAXONOMY OF BOIGA BEDDOMEI (WALL, 1909) COLUBRIDAE: SERPENTES FROM ANAIKATTY HILLS, WESTERN GHATS, INDIA

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ABSTRACT

Beddome's Cat Snake, *Boiga beddomei* (Wall, 1909) is largely distributed and restricted to southern Western Ghats and also reported from Anaiakatty Hills. This species may be taxonomically distinguished from its sympatric congeners by dorsal pholidosis count: 19: 19: 13; 7-8 supralabials; 3rd, 4th and 5th supralabials in contact with orbit; ventral 241-246 and 95-107 paired subcaudals.

KEYWORDS

Taxonomy, Redescription, Colubrids, Deciduous Forest, Western Ghats, India.

VARICELLA VACCINATION AS A POTENTIAL MULTIPLE SCLEROSIS PREVENTION STRATEGY

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ABSTRACT

Multiple sclerosis (MS), a chronic, debilitating central nervous system disease afflicting over 2.8 million people worldwide, is caused by unknown genetic and environmental factors, including delayed Epstein-Barr virus (EBV) infection. Here a hypothesis is proposed whereby MS is caused by primary EBV infection contracted after clade 3 varicella-zoster virus (VZV) infection. The hypothesis aligns with MS risk factors (latitude gradients, changing prevalence, sex ratios, migration factors, and viral antibody seroprevalence rates). The proposed hypothesis, which is rooted in the detection of VZV clade 3 DNA in a single MS patient, requires confirmation through examination of a greater number of MS patient VZV isolates. If correct, declining MS incidence rates should be observed within the next decade in countries that began universal early childhood varicella vaccination programs in the early 2000s. Implications for unvaccinated populations with rising MS rates are discussed to highlight varicella vaccination as a potential MS prevention strategy.

KEYWORDS

Multiple Sclerosis, Varicella Vaccination, Epstein-Barr Virus, Varicella-Zoster Virus.

PREDICTION ANALYSIS OF THE FEASIBILITY OF AN EVAPORATIVE COOLING SYSTEM UNDER THE TUNISIAN SAHARA CLIMATE CONDITIONS

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ABSTRACT

In Tunisian Sahara, solar energy is a source of energy with very high potential but not well exploited. The use of solar energy in combination with air conditioning (AC) systems supplied with electricity or heat can represent a good solution to reduce the electric power consumption. Solar-air conditioning could be a relevant solution to produce renewable solar cold. The main objective of this study is to predict the feasibility of an evaporative cooling system powered by solar energy and to carry out an economic and energy study of this system. In this adiabatic process, airflow circulates at low speed using a fan through a hygroscopic panel. This panel is irrigated at a specific temperature and a relatively low humidity. In this process, the inlet air is hot and dry, it therefore evaporates water by transforming part of its sensitive heat into latent heat, without any variation in enthalpy or total heat. At the outlet, the air temperature decreases and its humidity increases. The analysis prediction of an evaporative cooler, carried out on a digital psychrometric chart, demonstrated that an increase in the dry-bulb temperature of about 24% leads to an increase of the wet-bulb temperature of about 26.5% and 17.5% increase in the wet-bulb depression. The rise by 40% in the relative humidity increases the wet-bulb depression by a factor of 33%.

KEYWORDS

Evaporative cooling – Solar energy – Performance prediction – Experimental simulation.

COMPARISON OF TRADITIONAL AND MACHINE LEARNING PROGRAMS IN THE EVALUATION OF PROTEIN-LIGAND BINDING

Blessing Anyangwe, Arushi Desai, Elizabeth Fishman, Kevin Jin, Kai Kim, Erin Kraus, Eugene Lee, Angelina Li, Bridget Liu, Nicholas Sardy, Aarna Tekriwal, Osariemen Unuigbo, Alexander Zatuchney, and Eric Zhu, Drew University, Madison, New Jersey, United States of America

ABSTRACT

Molecular docking, an in-silico method with widespread pharmacological applications, is used to predict the optimal conformation of a protein-ligand complex. Traditionally, it uses search-score algorithms that generate protein-ligand poses and calculate each pose's binding strength. More recently, artificial intelligence (AI) programs have been developed and trained with protein-ligand datasets. To compare the accuracy of these approaches in site-specific docking, a traditional program and a deep-learning (DL) program were tasked with docking a set of protein-ligand pairs. Upon comparison of the two programs' results, it was determined that they predict optimal binding conformations with similar accuracy.

KEYWORDS

Molecular docking, Protein-ligand binding, Deep-learning, DiffDock-Pocket, SeeSAR.