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- [Machines, Vol. 12, Pages 939: A Hybrid DWA-MPC Framework for Coordinated Path Planning and Collision Avoidance in Articulated Steering Vehicles](#)

20 December, 2024

This paper presents an autonomous collision avoidance method that integrates path planning and control for articulated steering vehicles (ASVs) operating in underground tunnel environments. The confined nature of tunnel spaces, combined with the complex structure of ASVs, increases the risk of collisions due to path-tracking inaccuracies. To address these challenges, we propose a DWA-based obstacle [...]

- [Agriculture, Vol. 14, Pages 2350: Mass Spectrometry-Based Non-Targeted Lipidome Analysis and Extraction of Markers for the Authentication of White and Black Truffle Species and Their Origin Determination](#)

20 December, 2024

The visual authentication of high-value truffles (*Tuber magnatum* and *Tuber melanosporum*) is challenging, as they share similar morphological characteristics with other truffle species that have a lower economic value. This similarity complicates accurate identification and increases the risk of substitution or mislabeling, which can affect both market prices and consumer trust. For this reason, the [...]

- [Foods, Vol. 13, Pages 4143: The Antidiabetic Effect of Grape Skin Extracts of Selected Indigenous Croatian White Grapevine Varieties](#)

20 December, 2024

Grape skin is an excellent bioactive compound source with numerous beneficial health effects. This study aimed to determine and compare the antidiabetic potential of the grape skin of indigenous Croatian white grapevine varieties. The grape skin extracts (GSEs) were assessed for total polyphenols, antioxidant activity, and inhibition potential against α -amylase and α -glucosidase, enzymes responsible for [...]

- [Applied Sciences, Vol. 14, Pages 11977: Consistent Vertical Federated Deep Learning Using Task-Driven Features to Construct Integrated IoT Services](#)

20 December, 2024

By training a multivariate deep learning model distributed across existing IoT services using vertical federated learning, expanded services could be constructed cost-effectively while preserving the independent data architecture of each service. Previously, we proposed a design approach for vertical federated learning considering IoT domain characteristics. Also, our previous method, designed leveraging our approach, achieved improved [...]

- [Life, Vol. 14, Pages 1693: Effect of Preoperative Gum Chewing on Postoperative Nausea and Vomiting in Women Undergoing Robotic Laparoscopic Surgery for Uterine Myomas: A Randomized Controlled Trial](#)
20 December, 2024
Background: Postoperative nausea and vomiting (PONV) remains a frequent and uncomfortable complication in women undergoing robotic gynecological procedures. Despite the use of various preventive strategies, PONV continues to negatively impact recovery and increase healthcare expenses. This study aimed to evaluate whether the preoperative use of sugar-free chewing gum could effectively minimize the dependence on anti-emetic [...]
- [Veterinary Sciences, Vol. 11, Pages 669: Successful Treatment of Renal Cell Carcinoma Associated with Hypertrophic Osteopathy in a Cat](#)
20 December, 2024
An eight-year-old spayed female Abyssinian cat presented with lameness. Palpation revealed swelling, heat, and a reduced range of motion in the stifle and tarsal joints in both hind limbs. A radiographic examination of both hind limbs revealed periosteal proliferation from the distal tibia to the tarsal and metatarsal bones, which suggested hypertrophic osteopathy. Thorax and [...]
- [Technologies, Vol. 12, Pages 269: UWB Chaotic Pulse-Based Ranging: Time-of-Flight Approach](#)
20 December, 2024
Nowadays, indoor positioning using ultra-wideband (UWB) signals is actively being developed with the aim of implementing existing ideas and solutions, improving their performance, and searching for new measurement schemes. This paper proposes an approach to estimating the distance between wireless nodes by measuring radio signal propagation time using UWB chaotic radio pulses and UWB transceivers. [...]
- [Vaccines, Vol. 12, Pages 1437: A Psychosocial Critique of the Consequences of the COVID-19 Pandemic on UK Care Home Staff Attitudes to the Flu Vaccination: A Qualitative Longitudinal Study](#)
20 December, 2024
Background/Objectives: Vaccinating care home staff is essential to protect vulnerable residents by reducing infection risks and creating a safer care environment. However, vaccine hesitancy amongst staff remains a challenge, particularly since the COVID-19 pandemic raised concerns about side effects and vaccination mandates. This study examines how the pandemic influenced flu vaccine hesitancy amongst UK care [...]

- Nursing Reports, Vol. 14, Pages 4162-4172: Feasibility of Mental Health Triage Call Priority Prediction Using Machine Learning
20 December, 2024
Background: Optimum efficiency and responsiveness to callers of mental health helplines can only be achieved if call priority is accurately identified. Currently, call operators making a triage assessment rely heavily on their clinical judgment and experience. Due to the significant morbidity and mortality associated with mental illness, there is an urgent need to identify callers [...]
- Applied Sciences, Vol. 14, Pages 11975: Workload Assessment of Operators: Correlation Between NASA-TLX and Pupillary Responses
20 December, 2024
Operators in high-stress environments often face significant cognitive demands that can impair their performance, underscoring the need for comprehensive workload assessment. This study aims to study the relationship between subjective self-reported measures, the NASA task load index (NASA-TLX), objective bio-signal measures, and pupillary responses. The participants engaged in either a visual tracking task or a [...]
- Receptors, Vol. 3, Pages 555-573: LPA3: Pharmacodynamic Differences Between Lysophosphatidic Acid and Oleoyl-Methoxy Glycerophosphothionate: Biased Agonism, Two Sites
20 December, 2024
Background: Lysophosphatidic acid (LPA) receptor 3 (LPA3) is involved in many physiological and pathophysiological actions of this bioactive lipid, particularly in cancer. The actions of LPA and oleoyl-methoxy glycerophosphothionate (OMPT) were compared in LPA3-transfected HEK 293 cells. Methods: Receptor phosphorylation, ERK 1/2 activation, LPA3- β -arrestin 2 interaction, and changes in intracellular calcium were analyzed. Results: Our [...]
- SIUJ, Vol. 5, Pages 885-889: Humanitarian Urology in LMIC: Lessons Learned
20 December, 2024
Urologic healthcare in low- and middle-income countries is recognized to be underserved. The goal to improve urologic health outcomes for populations in these countries may be met through urologic humanitarian work, often brought about by aid workers with clinical expertise originating from high-income countries. This essay serves as a brief narrative review of the literature [...]
- SIUJ, Vol. 5, Pages 890-891: Focus on Uro-Oncology Practice in Chad: A Call to Action
20 December, 2024
In 2014, Unger-Saldaña et al [...]

- Energies, Vol. 17, Pages 6425: A Study on Bio-Coke Production—The Influence of Biochar Addition to the Coking Blend on Bio-Coke Quality Parameters
20 December, 2024
Carbon dioxide is emitted in several industrial processes and contributes to global warming. One of the industries that is considered a significant emitter is metallurgy. Therefore, it is necessary to search for and implement methods to reduce its emissions from metallurgical processes. An alternative option to the use of conventional coke, which is produced solely [...]
- IJERPH, Vol. 21, Pages 1702: COVID-19 Pandemic Impact on the Birth Weight of Children Born in a Brazilian Metropolis
20 December, 2024
Objective: To assess the birth weight of newborns whose mothers gave birth during the COVID-19 pandemic. Methods: A cross-sectional study based on data collected from medical records and through postnatal interviews to assess maternal and neonatal health outcomes (n = 470) during the pandemic. All participants were assisted in three Brazilian public hospitals in 2020. [...]
- JMSE, Vol. 12, Pages 2346: An Integrative Approach to Assess and Map Zostera noltei Meadows Along the Romanian Black Sea Coast
20 December, 2024
Seagrass meadows, including those formed by *Zostera noltei*, play a crucial role in marine ecosystem health by providing habitat stability and coastal protection. In the Romanian Black Sea, *Z. noltei* meadows are critically endangered due to pressures from eutrophication, habitat loss, and climate change. This study presents a comprehensive baseline assessment of *Z. noltei* meadows [...]
- Biomass, Vol. 4, Pages 1257-1301: Biomass Refined: 99% of Organic Carbon in Soils
20 December, 2024
Basic inventory is required for proper understanding and utilization of Earth's natural resources, especially with increasing soil degradation and species loss. Soil carbon is newly refined at >30,000 Gt C (gigatonnes C), ten times above prior totals. Soil organic carbon (SOC) is up to 24,000 Gt C, plus plant stocks at ~2400 Gt C, both [...]
- Energies, Vol. 17, Pages 6445: A Strategic Framework for Net-Zero Transitions: Integrating Fuzzy Logic and the DICE Model for Optimizing Ontario’s Energy Future
20 December, 2024
In response to the urgent threat of climate change and the drivers of high greenhouse gas emissions, countries worldwide are adopting policies to reduce their carbon emissions, with net-zero emissions targets. These targets vary by region, with Canada aiming to achieve net-zero emissions by 2050. In response to the Independent Electricity System Operator's (IESO's) "Pathways [...]

- [Animals, Vol. 14, Pages 3695: Ultrasonographic Measurement of Muscle and Subcutaneous Fat Thickness for the Objective Assessment of the Nutritional Status of Alpacas](#)

20 December, 2024

The aim of this study was to evaluate the ultrasonographic measurement of the subcutaneous fat and muscle layers at two different body locations as an objective tool with which to determine the nutritional status of alpacas. The results of ultrasonographic measurement were related to body weight, determined by scale, and body condition score (BCS), determined [...]

- [IJMS, Vol. 25, Pages 13670: Modulation of TNFR 1-Triggered Inflammation and Apoptosis Signals by Jacaranone in Cancer Cells](#)

20 December, 2024

Jacaranone derived from *Senecio scandens*, a traditional Chinese medicine used for centuries, has been documented to exhibit anti-inflammatory and antiproliferative properties in various tumor cell lines. However, the mechanism of action and relationship between inflammation and apoptosis induced by jacaranone remain inadequately elucidated. In this study, the targets of jacaranone and cancer were identified from [...]

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