RENEWABLE ENERGY AND IT`S DEVELOPMENT IN TODAY`S MODERN SOCIETY

Prof. Assoc. Dr. Arben Dushi
Department of Engineering and Architecture
European University of Tirana
arben.dushi@uet.edu.al

Abstract

Energy is at the heart of development. The gaps are daunting, but there is also progress on many fronts. The global energy landscape is witnessing a major transformation, and renewable energy is playing an increasingly vital role in helping countries develop modern, secure energy systems. Sharply lower costs for clean energy is helping with this transition, while disruptive technologies like smart grids, smart meters and geospatial data systems have upturned energy planning. Renewable heat consumption is expected to increase over the forecast period by 2023. However, a modest increase in the share of renewable heat is foreseen, as robust growth in total heat demand is expected to result from continuous economic and population growth. In this paper is briefly studied a review in this progress and also is made a prediction about its influence in usage in the future.

Keywords: energy, renewable energy, energy systems.

GREEK, ROMAN AND BYZANTINE ARCHITECTURE OF DURRËS

Prof. Dr. Elida Miraj

Department of Engineering and Architecture
European University of Tirana
Elida.miraj@uet.edu.al

Abstract

The modern city of Durrës, Albania's second largest city, is built on the remains of the ancient one, known as Epidamnos or Dyrrachion, transformed into Dyrrachium in Roman period, dates from the seventh century BC. Durrës is the first and the most strategic city on the Adriatic Sea. It was a major port of Illyria for Italy, whence a branch of the Via Egnatia runs past (technically bypasses) Salonica to Constantinople subsequently to link New with Old Rome. This city on the Eastern Shore of the Adriatic Sea was very important in Balkans and Mediterranean basin.

Being in the same territory for around 27 centuries it was always difficult for archaeological excavations. Few monuments discovered such as the Archaic Temple decorated with painted architectural terracottas and dated in the second quarter of the sixth century BC; the Helenistic villa, decorated with mosaics, dated in fourth century BC; the roman villas decorated with black and white or polychrome mosaics, dated in first, second and fourth centuries AD; the Public Bath, constructed at the end of first century or the beginning of second century AD; the aqueduct, constructed during the reign of Hadrian Emperor (117-138 AD). (the water was from the natural sources 15 km. far from the city); the Amphitheater, constructed in the beginning of second century AD; the Chapel of the amphitheater is adapted on the constructions of amphitheater perhaps in the second half of fourth century; Byzantine Round Forum, constructed under the reign of Anastasius (491-518 AD) or Justinian; the St. Michel Monastery, well known from the beautiful mosaic, constructed under the reign of Anastasius or Justinian; the Byzantine Walls, constructed under the reign of Justinian (527 to 565 AD) are a good testimony of architectural development of the city in Greek, Roman and Byzantine period.

In this paper I want to present the flourishing architectural heritage of this very important city through its long history, that's in our study will cover 12 centuries.

MAINTENANCE, REPAIR OR RESTRUCTURING OF EXISTING FACILITIES TO REDUCE OR ELIMINATE THE NEGATIVE IMPACT OF STRUCTURAL AND NON-STRUCTURAL INTERVENTIONS

Dr. Maksim Çipi
Department of Engineering and Architecture
European University of Tirana
maksim.cipi@uet.edu.al

Abstract

In our country, the period up to the 1990s was that of massive constructions of residential buildings. They have been mainly made of four to five floors and with a masonry structure. In special cases, scaffolding with reinforced concrete rams is also used, but always with the same limitation on the number of floors.

Further, with the political and economic changes of the 1990s, besides the construction of modern contemporary objects, innumerable modifications were made to the existing buildings as above.

These interventions have sought to change the functional side of these objects, demanding to affect only non-holders and non-structural elements. But even in such a case, the impact of these interventions on these objects has been significant.

Even more sensitive and with special consequences has been and is the impact of interventions on existing facilities, when they have directly affected the structural holding elements of the facility.

This material, after presenting a range of influential interventions in existing buildings, seeks to give some thoughts on the way of their inspection in general and the apparitions of various interventions, their "inventory" and the achievement of fairer and fuller assessment of their impact.

The ultimate purpose of this inspection and inventory may be the production of an "Building Card", with the categorization of the object in the current state, noting quite a few other parameters and other data as well as the categorization according to the ability to draw or highlight the problems that those objects present and the corresponding interventions they require, both in structural and economic terms.

Key words: Building, Existing, Modification, Intervention, Evaluation, Card, Holding Skill, Cost

EFFECTIVE COMMUNICATION PROTOCOL FOR AD-HOC WIRELESS SENSOR NETWORKS IN RICE FIELDS MONITORING

Prof. Dr. Mimoza Durresi
Department of Computer Science and Technology
European University of Tirana
mimoza.durresi@uet.edu.al

Abstract

Even though we live in 21st century the world's food scarcity is a very serious problem. Besides major causes such as uneven distribution of natural resources or investments for a country related to the human institutions, either government or public policy, a shortage of food may happen from different reasons such as growing crops failure due to drought, pests, or too much moisture. For this reason, crop fields monitoring is very important especially in the rice case as it represent a very important crop consumed by more than half of the world's population. According
to the International Rice Research Institute (IRRI), by 2025 the demand for rice is expected
to escalate by nearly 70%. Since the appropriate cultivation surfaces are limited, the most efficient way in yields increasing is their frequent monitoring in order to ensure optimal condition related to humidity, toxicity or pest control.

In this paper we develop a new communication protocol for ad-hoc wireless network created by the sensors used to monitor the rice fields. This is a hierarchical protocol where the sensors communicate through a virtual infrastructure that helps to collect the data from the monitoring nodes in an efficient way even in the areas with no wireless infrastructure. The communication scheme ensures a hierarchy of nodes that gets translated to hierarchy of costs as only a few nodes need to have a larger processing power. The field area is divided into virtual clusters where each cluster is represented from one node center that holds the communication for all the surrounded nodes and forwards its information towards the next cluster center found in the direction of the sink. As a result, the information collected even in the fields without any wireless infrastructure might be carried towards the clusters that are in a communication distance with the sink and making it possible to update the monitoring and control data centers with the updated information. Beside that the energy consumption will be restricted by the usage of photovoltaic elements and the development of a sleep-wake scheme in monitoring nodes.

Keywords; Wireless sensors networks, virtual infrastructure, wireless sensors protocols, ad-hoc networks, hierarchical schemes, etc.

BIG DATA ANALYTICS: INVESTIGATING AND DEVELOPING ANALYTICS TECHNIQUES FOR INDIVIDUALS' DATA PROTECTION

MSc. Ndricim Topalli
Department of Computer Science and Technology
European University of Tirana
Ndricim.topalli@uet.edu.al

Abstract
Data represents objects of many forms and in a variety of fields, such as science, engineering, text files, multimedia files, business, education, health, security, etc. The domain of data being gathered, in every field, has expanded, resulting in increased storage spaces required to store such data and more sophisticated algorithms and procedures for managing, processing, explaining and analysing such data. In most cases, such data are too complicated to be stored in traditional databases and Big Data Analytics will be needed. Because of the sensitivity of the information being stored, processed and analysed, this paper will look at ways that such actions are conform General Data Protection Regulation (GDPR) of 25th of May 2018.

USING MIND GENOMICS TO UNDERSTAND CONSUMER'S MIND: STUDY CASES IN THE FIELD OF MARKETING

Prof. Dr. Petraq Papajorgji
Department of Computer Science and Technology
European University of Tirana
Petraq.papajorgji@uet.edu.al

Abstract

The paper presents a comparison of two complementary approaches to understand opinions at a deep level regarding the controversial topic of consumer's mind. The first method is the emerging, and increasing popular technology of 'Text Mining,' which uses text as inputs from people, analyzing the structure of such texts. Freely emitted text allows for methods such as 'sentiment analysis' to understand the underlying minds of the people generating the text. The second method, 'Mind Genomics' comprises designed experiments, using systematically varied text, and experiments with people, in order to understand the 'algebra of the mind.' Our empirical study involved the Mind Genomics assessment of consumer's mind in several studies. The data from Mind Genomics suggest that people focus primarily on WHO should use the product. We compare the two methods to show both the similarities, differences, and potential connections between the two approaches to understanding people's opinions.