



FACULTY OF ENGINEERING AND
ARCHITECTURE

BULLETIN

JANUARY 2024



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What you will read in this issue

News from Faculty

Actual Topics in Engineering
and Architecture

Academic and Scientific
Activities

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TAG



***NEWS FROM
THE FACULTY***

**HAPPY
NEW YEAR**

2024



News From The Faculty

J A N U A R Y 2 0 2 4

Industrial Engineering

Working in Industrial Engineering, **Assist Prof. Dr. Binnur Güröl** participated as a jury in the **doctoral thesis defense** at Istanbul Aydın University.



5th Bioenergy Studies Symposium, within the scope of the "**Sustainable Biomass Use Project to Support the Development of the Turkish Economy towards Green Growth**", carried out by the General Directorate of Agricultural Research and Policies (TAGEM) and the United Nations Industrial Development Organization (UNIDO), with the financing of the Global Environment Facility (GEF), 17- It was held in Antalya on January 18, 2024.

Ministry of Agriculture and Forestry, Ministry of Energy and Natural Resources,. In the symposium, where more than 150 participants attended, including representatives from the Ministry of Environment, Urbanization and Climate Change, domestic and international academics, relevant non-governmental organizations and stakeholders from the private sector, one of our faculty members from the Department of Industrial Engineering, **Assit. Prof. Dr. Mert YILDIRIM** presented his paper titled "**Possibilities of Using Furniture Industry Waste in Bioenergy**".



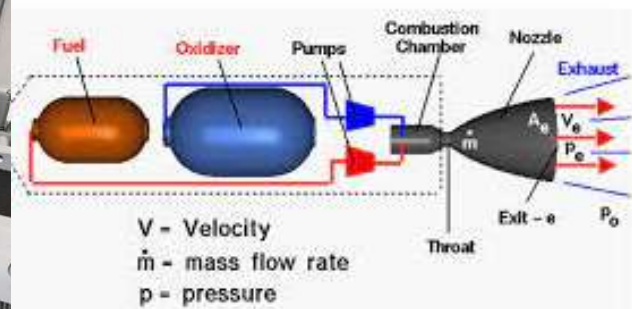
News From The Faculty

JANUARY 2024

Mechatronics Engineering

Project presentations were made on 12.01.2024 within the scope of **Mechatronic System Design** course. The students presented the studies they had prepared in the 30-minute time allocated to them in front of the juries consisting of faculty members of the department.

Project topics include Advanced Military Attack System, License Plate Reading System for Disabled Parking Areas, Fatigue Detection System, Mine Sweeper Design Using Radar System, Assault Land Vehicle, Liquid Fuel Rocket Engine, Robot Car, Self-Producing Mechatronics Based Smart Home, Smart Capture Camera System, 3D printing with Liquid Crystal Display (LCD), Broadband Antenna Design for Microwave Imaging, Color, Size and Shape Separation with PLC Controlled and Image Processing Conveyor Belt Systems, Desktop CNC Router Woodworking Bench Design.



News From The Faculty

JANUARY 2024

Architecture

As part of the **100th anniversary events of our Republic**, we opened **the exhibition, which is the 3rd stage** of the workshop titled **Atatürk's Architect: Seyfi Arkan / Seyfi Arkan Architecture**, on December 30, 2024, with the participation of our **Rector Prof. Dr. Bahri Şahin** and our **Vice Rector and also our Dean Prof. Dr. Necmettin Maraşlı**. Our students presented the model of the Florya Marine Mansion, the basic model in which the construction system can be seen, the interior models of the living room, reception hall and Atatürk's study rooms at the entrance, and explained the understanding of modernism of the new republic to the participants. We would like to **thank our lecturers Assoc. Prof. İlke Ciritci, Dr. Semih G. Yıldırım, Dr. Meryem M. Fındıkgil, Dr. Aytek Alkaya** and our students for their contributions.



Katkıda bulunan öğrencilerimiz;

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210404737	BEFRİN ÇELİK

Architecture

On December 23, 2024, **Architecture and Design Club students organized a trip to Miniatürk**. The trip, which **Assoc. Prof. İlke Ciritci** also participated in, includes the Istanbul Historical Peninsula Model Exhibition in addition to Miniatürk's permanent exhibition in the remainder of the year. The Istanbul Historical Peninsula Model Exhibition, which is one of the few models in the world and one of the largest in Turkey on this scale, features 10.000 figures and 50.000 LED lights, thousands of people, horse-drawn carriages, fires, the Janissary rebellion scene, torches, historical buildings, special architectural details, and smoking chimneys. It is located in a closed area of 500m². The model was completed in 5 years, based on historical sources, produced in 400.000 m² and 1/87 scale. The exhibition describes life in a geography extending from Topkapı Palace to the Sultanahmet Mosque in the 400-year period between the 16th and 19th centuries. The exhibition consists of 3 parts; This is the section where video mapping, the main exhibition and the production process of the models are explained.

You can follow him on his Instagram account;

@tarihiyamadamodelsergisi

@istanbulhistoricalpeninsula

@miniaturkmuzesi



Architecture

Curtain wall construction site was visited as part of the Arc423 **Construction Course** on January 5, 2024; Within the scope of the course, theoretical topics related to curtain wall design and installation are explained and application examples are given. In addition, **Construction Project A group instructor Assist. Prof. Semih G. Yıldırım** (PhD) and his students visited the construction site of Istanbul Gelisim University Faculty of Dentistry building for facade installations. During the site visit, spandrel and vision parts, as well as the fabrications and details of parametric facade elements were examined.



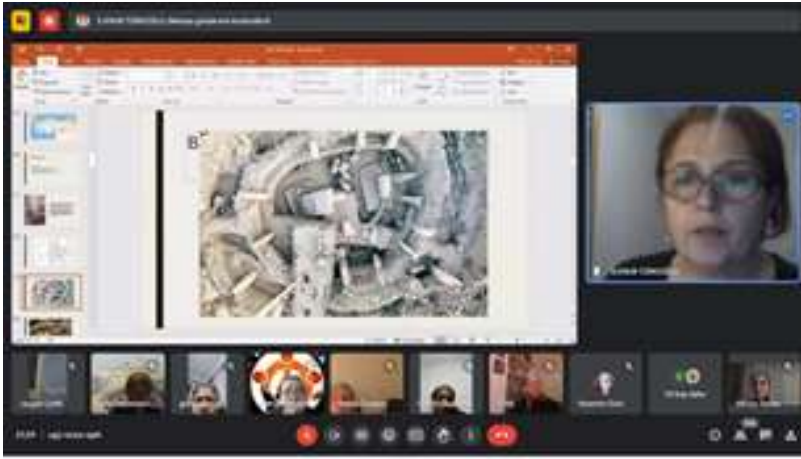
On Monday, January 22, the **project jury** was held at the **Chamber of Architects** for the senior students of Işık University. **Lecturer Burak Kaan Yılmazsoy** joined the jury as a guest.

The jury was opened by Department Head **Prof. Dr. Nuran Zeren Gülersoy**. Since **Dr. Ayşe Öztürk** was the jury of the group of students, the jury started after her statements about the jury.



Architecture

Department of Architecture faculty member **Dr. İlknur Türkoğlu** gave a seminar titled "**Göbeklitepe and Other Hills**" as a guest of the Disaster Solidarity Network on Wednesday evening, January 10th. The seminar, which was listened to with great interest, first focused on what Göbeklitepe means for human history and what results were obtained from the data revealed in the excavations. Türkoğlu then focused on the Stone Hills Project created by the Ministry of Culture and Tourism, which includes excavation areas contemporary with Göbeklitepe and located in the same region, and gave information about the culture that lived in the region 12 thousand years ago. The seminar ended with answers to the questions of the participants



Res. Assist. Burcu Korkut, Department of Architecture, participated as a jury member in the open project market organized within the scope of TES111E Project I course, which is jointly conducted by Istanbul Technical University Faculty of Architecture, Departments of Architecture, Landscape Architecture, Interior Architecture, Urban and Regional Planning, Industrial Design.



Architecture

In the Institute of Graduate Studies Architecture (Turkish) Master's Program, the student named Leman Akman held his thesis defense on 17.01.2024 with his thesis titled "**Climate Change and Climate-Balanced Environmental Design Principles**". The aforementioned student successfully completed his thesis under the supervision of **Prof. Dr. Mehmet Şener Küçükdoğu**. Prof. Dr. Rana Kutlu and Dr. Semih G. Yıldırım participated in the thesis defense as jury members.



On Thursday, January 4th, within the scope of our teacher **Burak Kaan Yılmazsoy**'s course, the final jury took place in the **introduction to architectural design** course. The jury included **Dr. Lecturer Erdal Yıldız** from our university; **Dr. Lecturer Ayşe Öztürk**, **Dr. Lecturer Ferhan Yalçın** and **Architect Mine Çiçek** attended as guests.



Architecture

At the High School Winter Academy held on 24.01.2024, a **'Structure' workshop** was organized for high school students who are interested in the Architecture program. In the workshop **conducted by Assoc. Prof. İlke Ciritci**, students discussed architecture through Vitruvius' statement 'Utilitas, Firmitas, Venustas' after the presentation **'What is Architecture?'** and then they realized the Structure design by examining the Strength clause.



News From The Faculty

J A N U A R Y 2 0 2 4

ELECTRICAL AND ELECTRONICS ENGINEERING



“Electronic Circuits Project Exhibition” was held

36 projects of Istanbul Gelişim University, Aviation Electrical and Electronics and Electrical and Electronics Engineering Department students met with students and academicians at the "Electronic Circuits Project Exhibition". At the event supported by IGU Technology Transfer Office (IGU-TTO), it was seen that many of the students' projects were **prepared for application to TEKNOFEST**, one of Turkey's prestigious technology competitions.

Moving forward with the vision of **"Research University"**; In IGU, which adopts a modern, developing, productive and quality education approach with its projects and collaborations by contributing to the production of new technologies; 36 projects of Aviation Electrical and Electronics and Electrical and Electronics Engineering Department students, carried out under the **supervision of Lecturer İzzet Yavuz**, met with students and academicians at the "Electronic Circuits Project Exhibition". IGU Rector Prof. Dr. Bahri Şahin while students gained important experience in the exhibition, which started with the opening speech of Bahri Şahin; It was seen that many of the projects were prepared for application to TEKNOFEST, one of Turkey's prestigious technology competitions.

The referee committee established by academics from IGU evaluated the projects.

With the support provided by IGU-TTO to students, young engineer candidates had the opportunity to realize their creative projects. Rector Prof. made the opening speech. Dr. With these successes of the students, Bahri Şahin once again emphasized how much importance the university attaches to technological innovations. While the project exhibition demonstrates students' abilities to put academic knowledge into practice and produce solutions for the industry; By supporting the university's technology-oriented education approach, it gave students the opportunity to play an active role in the industry.

After the exhibition, the referee committee established by academics from Istanbul Gelişim University evaluated the projects.

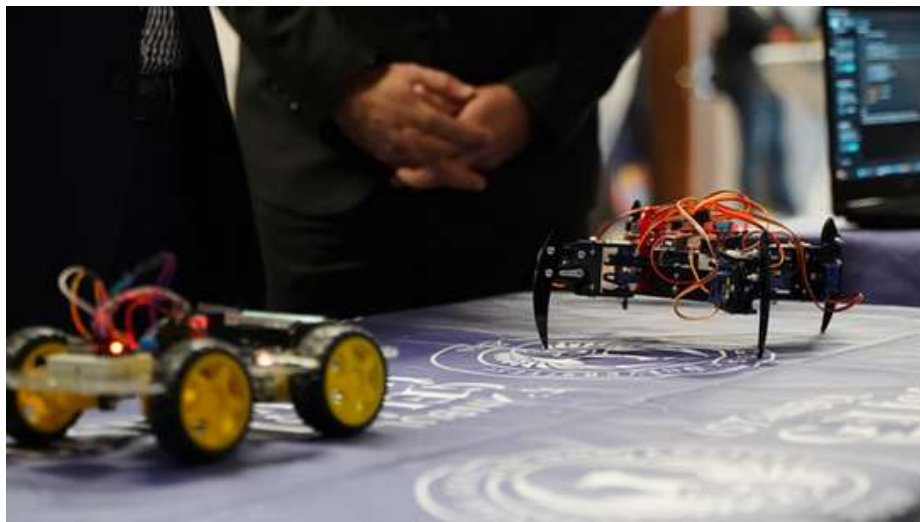
Those who were eligible to receive the award were as follows:

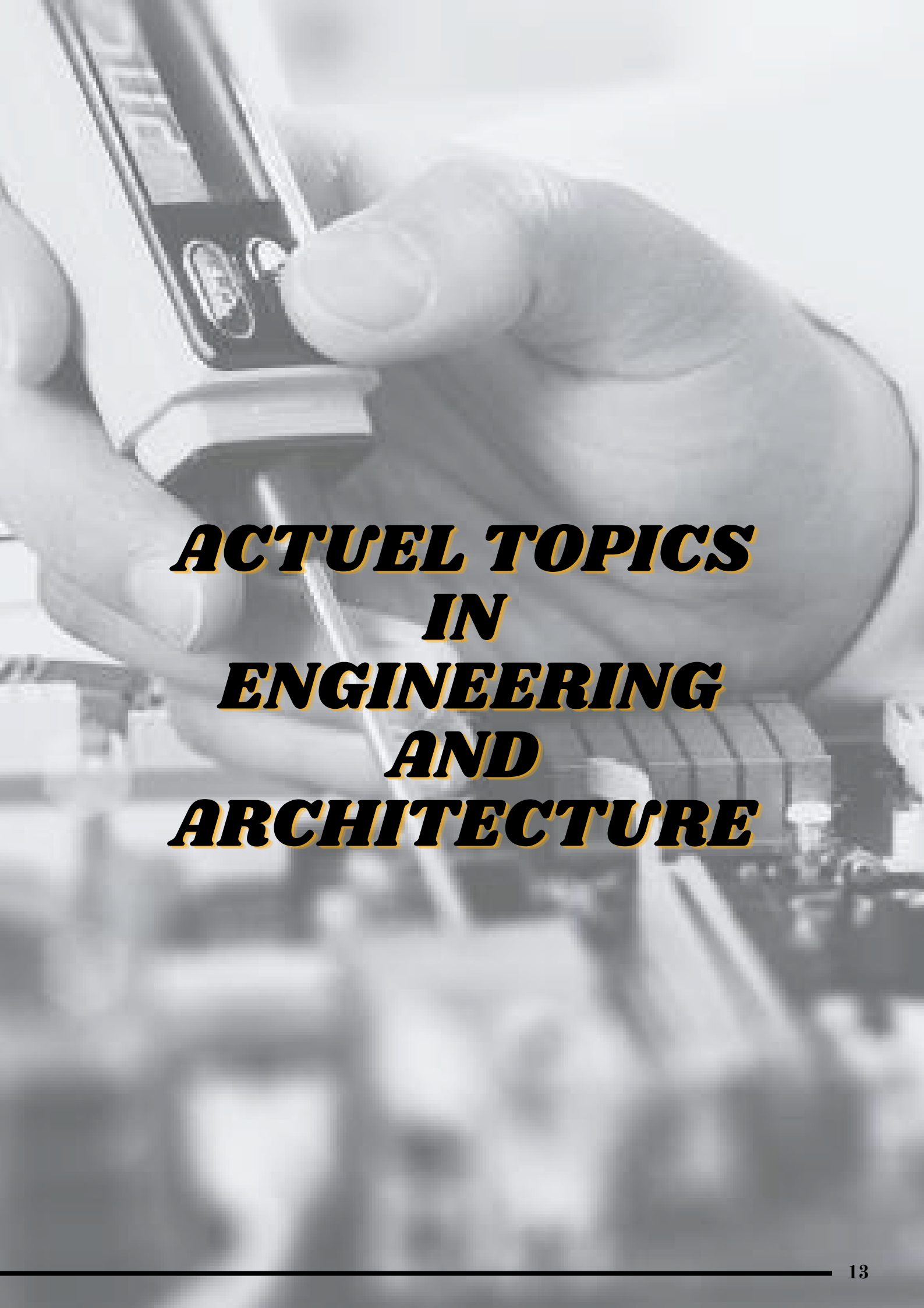
- 1.Oğulcan Demir- Public Transportation Vehicle with Aerial Line Transmission
- 2.Ahmet Necip Arıca- Eren Yılmaz > Topographic Map Drawing with Drone
- 3.Murat Yaman- Talha Gürgöze > Remote Controlled Radar Marine Vehicle

Jury Honorable Mention

- 1.İrem Türkyılmaz- Kaan İrmak- Ege Tez > Smart Greenhouse
- 2.Mustafa Sencer Kaçar > Line Following, Obstacle Avoiding and Manual Driving Vehicle
- 3.Salih Şen – Object Tracking







***ACTUEL TOPICS
IN
ENGINEERING
AND
ARCHITECTURE***

Quantum Leap: The Revolutionary World of Quantum Internet

Prepared by: Res.Asisst. Erdi ACAR



Quantum Internet connects remote quantum devices through quantum and classical solutions. It is a self-developed network. New communication far beyond existing technologies as the final stage of the quantum revolution that provides forms and computing capability. It can be seen. Unlike traditional networks, Quantum Internet is similar to classical networks. quantum theory, including phenomena such as non-entanglement, quantum teleportation, and the cloning theorem. It works under the rules of mechanics. This is the unique properties of quantum mechanics. It requires a fundamental change in network design to adapt [1].

Vision of the quantum Internet, global quantum teleportation and quantum key distribution. It enables quantum communication such as (QKD). This technology provides secure communication, time. It provides many security features on the current internet by offering the view and other advanced applications. can overcome the limitation. The quantum bits or qubits used in this network are simultaneously can be found in many situations and can be found traveling over long distances. It offers more powerful features. However, qubits cannot be copied and any. New concepts and concepts of isolation of qubits are possible, as copying attempts can be detected. requires technologies. Despite the development of the Quantum Internet, it still faces experimental difficulties. is progressing and the first long-range quantum networks are already being planned [2].

Building and scaling quantum networks, physics, computer science and engineering. The limits of collaboration are a challenging endeavor. Quantum Internet is in the development stages, improving support for more complex application protocols.

Although it is difficult to predict the exact emergence of the future quantum internet, The emergence of the first multi-node quantum networks within a few years, this revolutionary. It is an important step towards technology. These developments are only theoretical as well as efficiency.

offers exciting opportunities to test across and across existing. The big change marks the birth of a Quantum Internet [2].

Who is a Data Analyst?

Prepared by: Res. Asisst. Sevcan BULUT



Data Analyst and Data Analytics

Data analytics is a process used to understand, interpret and extract valuable insights from the vast amounts of data accumulated in organizations. Data analytics focuses on extracting data-based information to improve decision-making processes, predict **future trends and optimize business strategies**.

Who is a Data Analyst?

A data analyst is an expert with analytical skills and is usually trained in mathematics, statistics, computer science or a similar field. This professional has mastered skills such as data mining, statistical analysis, modeling and programming. He or she also has the ability to tell data stories in an insightful and effective way, creating reports and visualizations tailored to business needs.

Basic Steps of Data Analytics:

1. **Data Collection:** The first step is to collect data from the data sources that businesses have (e.g. customer data, sales figures, web traffic).
2. **Data Cleaning and Preparation:** The data collected can often be disorganized or incomplete. The data analyst cleans, organizes and prepares this data for analysis.
3. **Analysis and Modeling:** The data analyst analyzes the data using statistical and mathematical methods. At this stage, various analytical models can be applied to identify patterns, relationships and trends.
4. **Interpreting and Reporting Results:** The results of the analysis are interpreted in a way that is understandable and usable for business leaders or stakeholders. Reports and visualizations support decision-making processes.

Importance of Data Analytics:

Data analytics helps businesses gain a competitive advantage. When applied correctly and effectively, data analytics can provide the following advantages

- Optimizing business processes
- Understanding customer behavior and targeted marketing
- Increasing operational efficiency
- Risk management and identification of preventive measures

In conclusion, data analytics plays a critical role in today's business world and emphasizes the importance of making informed decisions in a data-rich world.

Data Analysis: The Reshaping Power of Industrial Engineering

Prepared by: Res.Asisst. Duygu TÜYLÜ



Today's industrial engineering is becoming more data-oriented with rapidly developing technology and digital transformation. This change offers industrial engineers new tools to optimize business processes and strengthen decision-making processes. Here is the **role of data analysis** in industrial engineering:

1. Data Collection and Sensor Technology: Industrial engineers have the opportunity to collect large amounts of data through sensors in production facilities and business processes. These sensors provide live data from every stage in the production line, making it possible to monitor processes in real time.

2. Efficiency Optimization with Data Analysis: Collected data provides industrial engineers with the opportunity to identify potential efficiency gains in processes. Data analysis plays a critical role in making improvements in areas such as reducing production errors, predicting machine failures, and optimizing energy use.

3. Big Data Analytics and Decision Making: Industrial engineers can predict future trends by analyzing past performance data thanks to big data analytics. This strengthens their decision-making process and helps them take a more information-driven approach to strategic planning.

4. Demand Forecasting and Inventory Management: Data analysis provides industrial engineers with information on making demand forecasts and managing inventory. This allows businesses to react more quickly and effectively to fluctuations in demand, so businesses can both increase customer satisfaction and reduce operational costs.

As a result, data analysis in the field of industrial engineering plays a critical role in optimizing business processes, reducing costs and gaining competitive advantage. In the future, data analysis skills will occupy an important place in the professional portfolios of industrial engineers.



***ACADEMIC AND
SCIENTIFIC
ACTIVITIES***

INDUSTRIAL ENGINEERING



Working in Department of Industrial Engineering Assist Prof. Dr. Binnur Gürül's new book chapter has published.

Istanbul Gelisim University (IGU) Engineering and Architecture Faculty Industrial Engineering Faculty Member Assit. Prof. Dr. Binnur Gürül's book section was published in the book "Management and Organization in Businesses"

The book is introduced as follows:

"The management and organization book was written taking into account the basic activities for the internal and external processes of businesses.

Book; It was written based on the information needed by academics, researchers, students, business owners, managers and employees and following a systematic writing technique. In the book, an explanation as simple as possible has been preferred. The reason for this is to ensure that everyone can easily read and understand the book."

ARCHITECTURE

Assoc. Prof. İlke Ciritci and Dr. Semih Göksel Yıldırım, faculty members of our department, attended the TOKYO SUMMIT-VIII 8th International Conference on Innovative Studies of Contemporary Sciences Conference 'Temporary Housing Design For Post-Earthquake in Istanbul; They participated under the title 'Lessons Learned From Japan'.

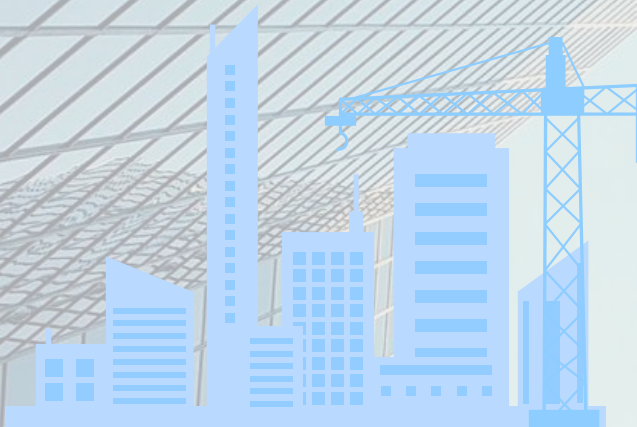




The article titled "Experts profiling on a healthier built environment: lowering the threat of climate change" by Dr. OLUWAGBEMIGA PAUL AGBOOLA, lecturer of the Department of Architecture, was published in the International Journal of Human Capital in Urban Management, indexed by Scopus. You can access the article from the link below.

Agboola, O.P., Zakka, S.D., & Olatunji, S.A. (2024). Experts profiling on a healthier built environment: lowering the threat of climate change. International Journal of Human Capital in Urban Management, 9 (1), 47-60. ISSN: 2476-4698
<https://doi.org/10.22034/ijhcum.2024.707337.1593>

CIVIL ENGINEERING



The research paper titled "Seismic Damage Prediction of Buildings Using Fuzzy Logic, The Case of Ambarlı Neighborhood at Avclar" prepared by our Civil Engineering department member Assoc. Prof. Dr. Suleiman KHATRUSH was published in the Resilience Journal.

The conference paper titled "Estimation of the Unconfined Compressive Strength of Cement Stabilized Clay Using Artificial Neural Networks (ANN)" by our Civil Engineering department member Assoc. Prof. Dr. Suleiman KHATRUSH was presented at the International Conference on Engineering Technologies.

Our graduate students Ahmad Khaled ASLAMI and Rumeysa GÖZÜBENLİ who were supervised by our civil engineering department member Assist. Prof. Dr. Yasin PAŞA successfully defended their master thesis.

MECHATRONIC ENGINEERING



The article titled "Modeling the relationship between outdoor meteorological data and energy consumptions at heating and cooling periods: Application in a university building" prepared by Prof. Dr. Bedri YÜKSEL and his working group was published in the "Numerical Algebra, Control and Optimization".

**ELECTRICAL AND ELECTRONICS
ENGINEERING**

One of the faculty members of our department, Dr. Lecturer Member Ayşe Karaoğlu, 'Examination of short-interval intracortical inhibition with frequencyogram', Kaya, İ., Karaoğlu, A., Topkaya Arslan, B., Uysal, H., Türker, K.S. The study was presented as an oral presentation at the 59th National Neurology Congress.

COMPUTER ENGINEERING

Dr. Lecturer Mustafa Şenol's paper titled "Innovation in Enterprise Cyber Security", presented at the 4th International Informatics and Software Engineering Conference (IISEC'23), held in Ankara on 21-22 December 2024, IEEE on 17 January 2024 Published oNXplore (<https://ieeexplore.ieee.org/document/10390993>).

Innovation in Corporate Cyber Security

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İSTANBUL GELİŞİM UNIVERSITY GRADUATE TRACKING SYSTEM

Graduate Tracking System (METSİS) was opened to determine and follow the current status of our graduates, such as employment and post-graduation education, and to create statistical data. Istanbul Gelişim University has activated METSİS in order to strengthen its relations with graduates and contribute to the employment of graduates. Our graduates can become members of METSİS free of charge. (metsis.gelisim.edu.tr)

Our graduates who are METSİS members can follow our job postings by updating their personal profiles.

How do I become a member of METSİS?

Log in to metsis.gelisim.edu.tr platform.

You can follow the postings in the open positions box.

To apply for the postings, you can create an account from the New Candidate box.

After creating an account, you can view job postings and apply for suitable positions from the postings tab at the top.

GRADUATE SATISFACTION SURVEY

Dear IGU Alumni,

Within the scope of the Strategic Plan, a "Graduate Evaluation Survey" has been developed in order to obtain your opinions as an important stakeholder and to determine the program and course outcomes in line with these opinions.

If you want to see your university in higher rankings, we kindly ask you to fill out the survey and thank you for your participation.

Graduate Evaluation Survey:
<https://metsis.gelisim.edu.tr/>



SCAN ME