ISTANBUL
GELISIM UNIVERSITY

COMPUTER ENGINEERING

> Computer engineering is the art and science of engineering, where digital wizards mesmerizingly create the world of the future with algorithms and circuits.

Assıst Prof. Oğuzhan ÖZTAŞ
Head of Computer Engineering Department

İSTANBUL GELİŞİM ÜNİVERSİTESİ
2008

Mühendislik ve Mimarlık Fakültesi

ABOUT US

The Department of Computer Engineering, one of the prestigious and dynamic departments of Istanbul Gelisim University Faculty of Engineering and Architecture, aims to train leading engineers in the rapidly developing world of technology. Our department, which started its education life in 2011-2012 academic year, gave its first graduates in 2014-2015 academic year and has been continuously developing since then.

Our Computer Engineering program offers students an education at global standards with a curriculum that is fully compatible with the European Credit Transfer System (ECTS). Our department also has ABET accreditation, which is recognized worldwide and certifies our quality of education.

Our education process includes theoretical knowledge as well as practical experiences. Our students are provided with the opportunity to consolidate their knowledge and skills by providing a comprehensive learning experience in modern classrooms and fully equipped computer laboratories. With project-based learning opportunities, our students have the chance to put their theoretical knowledge into practice and produce innovative solutions.

As Istanbul Gelisim University Department of Computer Engineering, we focus on educating engineers who shape technology, are innovative and have high problem-solving skills. By prioritizing quality in education, we open a bright career path for our students. With our strong academic staff and advanced technology facilities, we prepare them as the technological leaders of the future.

OUR MISSION

As the Department of Computer Engineering;

- Aiming to add value to our city, society and humanity,
- Considering education, research and community service activities as its primary duty,
- Raising individuals who have merit and use resources effectively and accountably,
- Believing unconditionally in the ethics and freedom of science
- Have an internalized culture of quality and tolerance,
- In constant development physically, digitally, socially, culturally and psychologically,
- Recognized nationally and internationally for its innovative and advanced technology projects,
- Promotes teamwork and interdisciplinary collaboration,
-

As a department, equipping our students with the knowledge and skills for a good, just and sustainable world is our top priority.
In line with this mission, we aim to conduct world-class education and research activities in the field of computer engineering and to train leading individuals in this field

OUR VISION

To be a department that is accepted and appreciated by national and international academic and industrial organizations with a contemporary and qualified education system, to provide its students with values that will make a difference, to be sensitive to ethical values, to be prone to teamwork, to train researchers and innovative computer engineers.

PROGRAM AND CURRICULUM INFORMATION

Our Computer Engineering program consists of a variety of courses that have been carefully designed to provide our students with a broad range of knowledge and skills. The main components of our program are as follows:

- **38 Required Courses**: Aims to provide the necessary knowledge and skills in basic engineering and computer sciences.
- **7 Departmental Elective Courses**: Provides an in-depth focus on specific topics within computer engineering.
- **2 Non-Departmental Elective Courses**: Taken from different departments to enhance students' interdisciplinary knowledge.
- **4 Teaching Pedagogical Formation Courses**: These are pedagogical formation courses offered to provide students with teaching skills.
- **2 Social Elective Courses:** It aims to enable students to gain knowledge and broaden their perspectives in social and cultural fields.

This program aims to provide our students with a wide range of knowledge and equip them with the necessary skills to succeed in their careers. Our Computer Engineering program, with its comprehensive and versatile structure, contributes to the development of both technical and social skills of our students and contributes to their becoming competent and successful individuals in their fields.

PROGRAM EDUCATION OBJECTIVES

According to the mission of the Computer Engineering program, the following program educational objectives are the career and professional achievements that our graduates are expected to achieve within a few years of graduation:

1. Acquire disciplined reasoning, critical thinking and applied skills to identify, analyze and solve problems.
2. Communicate effectively orally and in writing to articulate technical information, ideas and recommendations.
3. Consider the professional, ethical and social responsibility of engineering technology practices.
4. Act effectively, think independently and work collaboratively in a team environment in a membership or leadership role.
5. Actively participate in professional development, including continuous self-improvement and lifelong learning.

LEARNING OUTCOMES

Program Graduates Gain the Following Knowledge and Skills

1. Ability to identify, analyze, design, model and solve complex engineering problems based on the fundamentals of engineering, science and mathematics

2. Ability to apply engineering design to produce solutions that meet specific needs, taking into account global, cultural, social, environmental and economic factors, as well as public health, safety and welfare

3. Ability to communicate effectively with various stakeholders

4. Recognize ethical and professional responsibilities in engineering and the ability to make informed decisions considering the impact of engineering solutions on global, economic, environmental and societal contexts

5. Ability to work effectively in a team whose members provide co-leadership, create a collaborative and inclusive environment, set goals, plan tasks and meet objectives

6. Ability to design and conduct appropriate experiments, analyze and interpret data, and apply engineering principles to draw conclusions

7. Ability to find ways to acquire and apply new knowledge when necessary using appropriate learning strategies

DEPARTMENT MANAGEMENT

HEAD OF DEPARTMENT

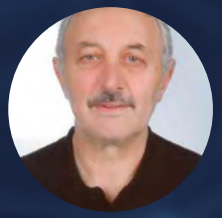
ASSIST PROF.
OĞUZHAN ÖZTAŞ
(PHD)
oztas@gelisim.edu.tr

VİCE HEAD OF DEPARTMENT

ASSIST PROF.
TARIK ARABACI
(PHD)
tarabaci@gelisim.edu.tr

ACADEMIC STAFF

Assist Prof. Oğuzhan ÖZTAŞ (PhD)
-
Image Processing

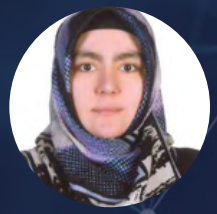


Prof. Abdulsamet HAŞILOĞLU (PhD)
-
Cloud Computing

Assoc. Prof. Elham PASHAEI (PhD)
-
Artificial Intelligence

Assoc. Prof. Mehmet Fatih TÜYSÜZ (PhD)
-
Computer Networks

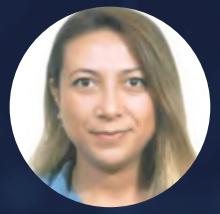
Assist Prof. Mustafa ŞENOL (PhD)
-
Cyber Security



Assist Prof. Nihal ALTUNTAŞ (PhD)
-
Artificial Intelligence

Assist Prof. Serkan GÖNEN (PhD)
-
Cyber Security

Assist Prof. Metin Dumanlu (PhD)
-
Hardware



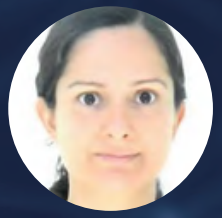
Assist Prof. Melis BOLAT (PhD)
-
Algebra

Assist Prof. Tarık ARABACI (PhD)
-
Algebra

The Department of Computer Engineering, with its expert and experienced academic staff, constantly renews itself and conducts various research projects to provide students with the most up-to-date and comprehensive information.

ACADEMIC STAFF

Assist Prof. Zeinap HASSANZADEH (PhD) - Operations Research



Assist Prof. Damla ARİFOĞLU (PhD) - Software

Assist Prof. İhsan Mert ÖZÇELİK (PhD) - Computer Networks

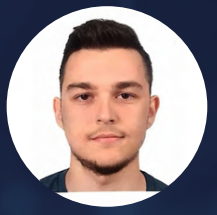
Assist Prof. Gökay Burak AKKUŞ (PhD) - Software

Assist Prof. Ferhat KÜRÜZ (PhD) - Applied Mathematics

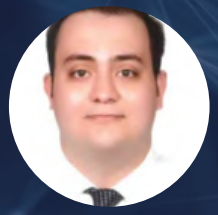
Assist Prof. Ümit ALKAN (PhD) - Physics

Res. Asisst. Mehmet Ali BARIŞKAN - Cyber Security

Res. Asisst. Erdi ACAR - Quantum Computing



Res. Asisst. Muhammet Mustafa YURDAKUL - Computer Vision



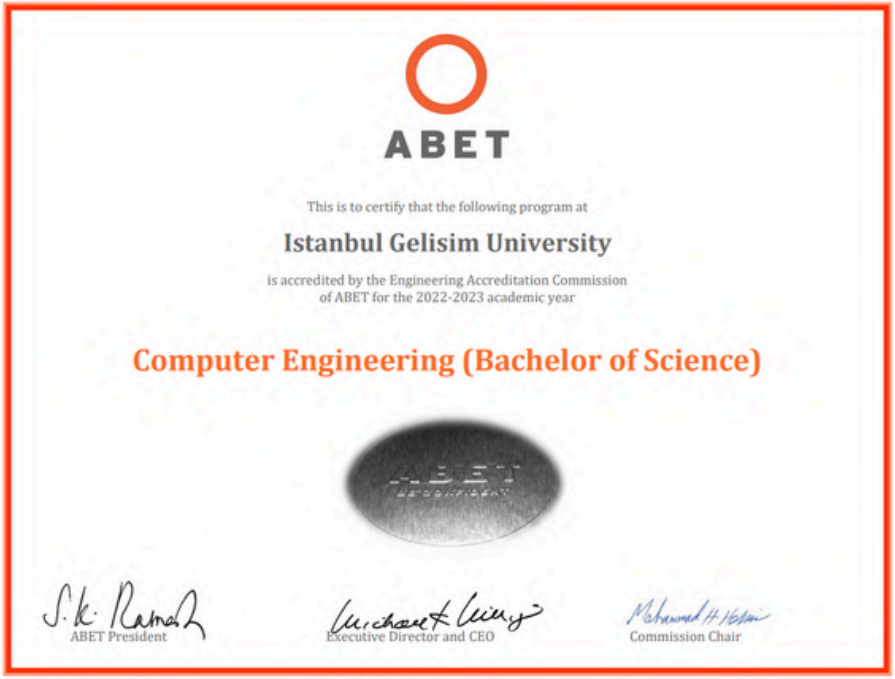
Res. Asisst. Ahmet Nail TAŞTAN - Cyber Security

The Department of Computer Engineering, with its expert and experienced academic staff, constantly renews itself and conducts various research projects to provide students with the most up-to-date and comprehensive information.

ACCREDITATION

ABET (Accreditation Board for Engineering and Technology) is a non-profit, U.S.-based organization that accredits engineering and technology higher education programs.

Although there are many organizations around the world that inspect whether higher education programs are carried out within certain norms in terms of teaching processes and outcomes, ABET is the leading organization in this field in terms of inspection approaches and methods, especially when it comes to the inspection of engineering programs.


ABET

This is to certify that the following program at

Istanbul Gelisim University

is accredited by the Engineering Accreditation Commission of ABET for the 2022-2023 academic year

Computer Engineering (Bachelor of Science)

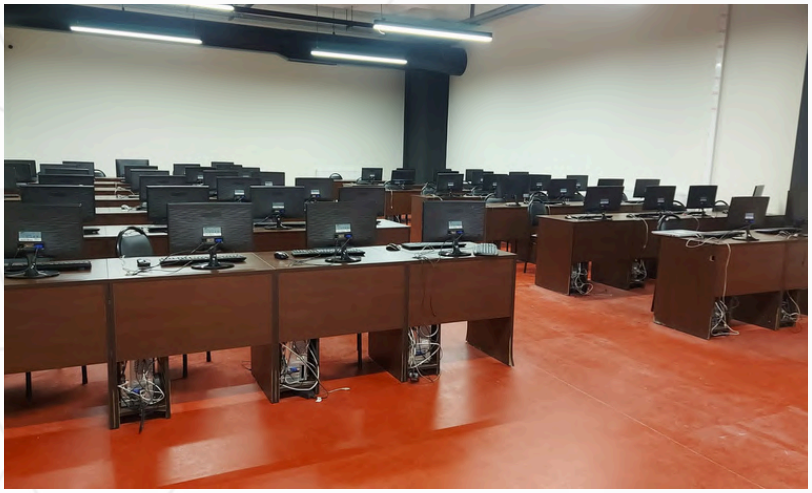
ABET President

Executive Director and CEO

Commission Chair

It provides assurance that Istanbul Gelisim University's programs meet the quality standards of the profession for which it prepares graduates. Istanbul Gelisim University Department of Computer Engineering is among the programs accredited by ABET and offers its students an education at internationally recognized quality standards.

LABORATORIES



Our students have the opportunity to improve their knowledge and skills by practicing in programming, informatics and artificial intelligence. The courses, which are carried out using modern equipment and up-to-date software, provide our students with a qualified education suitable for the needs of the sector.

There are 11 computer laboratories in our faculty. These laboratories are designed to provide comprehensive training in hardware and software.

R&D Projects

1

IGUROB: Artificial Intelligence Assisted Humanoid Robot Design

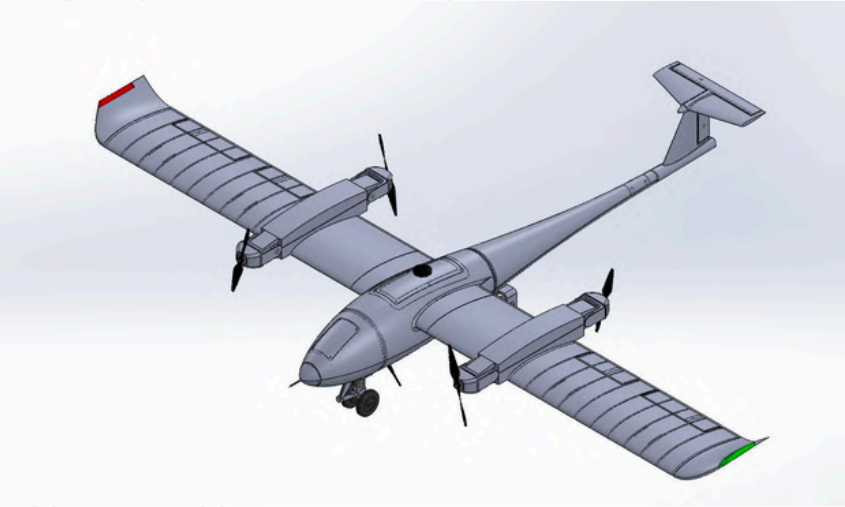
2

A Comprehensive Network Against Brain Cancer

Behavioral Next Generation in Wireless Networks for Cyber Security

R&D Projects

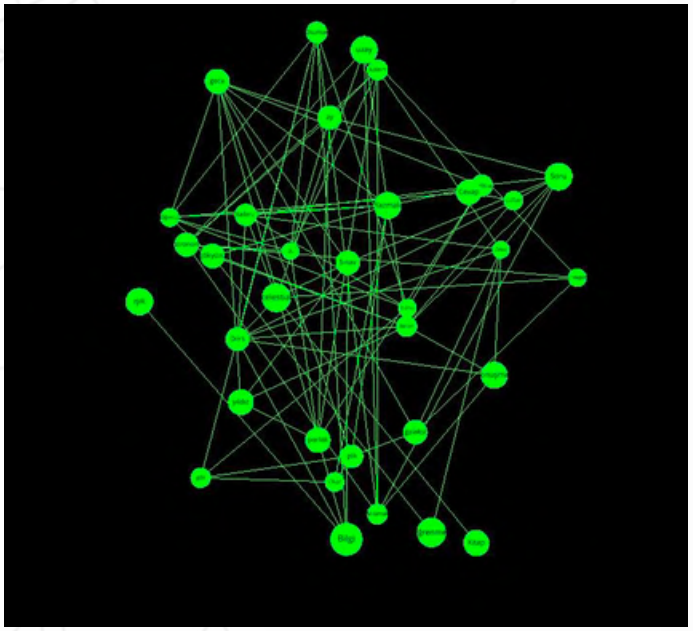
Artificial Intelligence Powered 3D Mapping



- It was submitted to Teknofest, TAI Hangar and AOSB Sabancı R&D Competitions.

R&D Projects

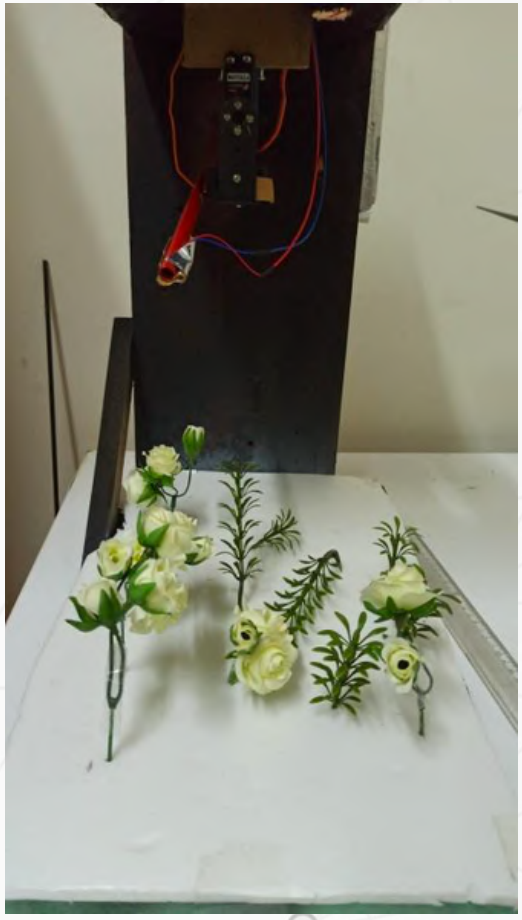
Language (Turkish) Processing with Artificial Intelligence: AI Assistant



Model studies using artificial neural network and genetic algorithm to mimic the listening, perception and speech functions of the human brain.

R&D Projects

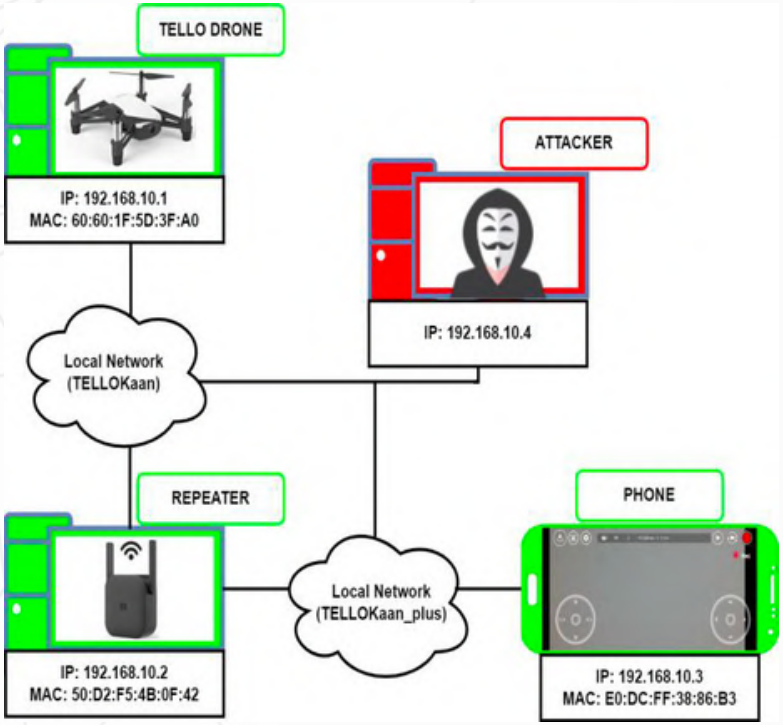
Applying Artificial Intelligence to Agricultural Drone



Model studies using artificial neural network and genetic algorithm to mimic the listening, perception and speech functions of the human brain.

R&D Projects

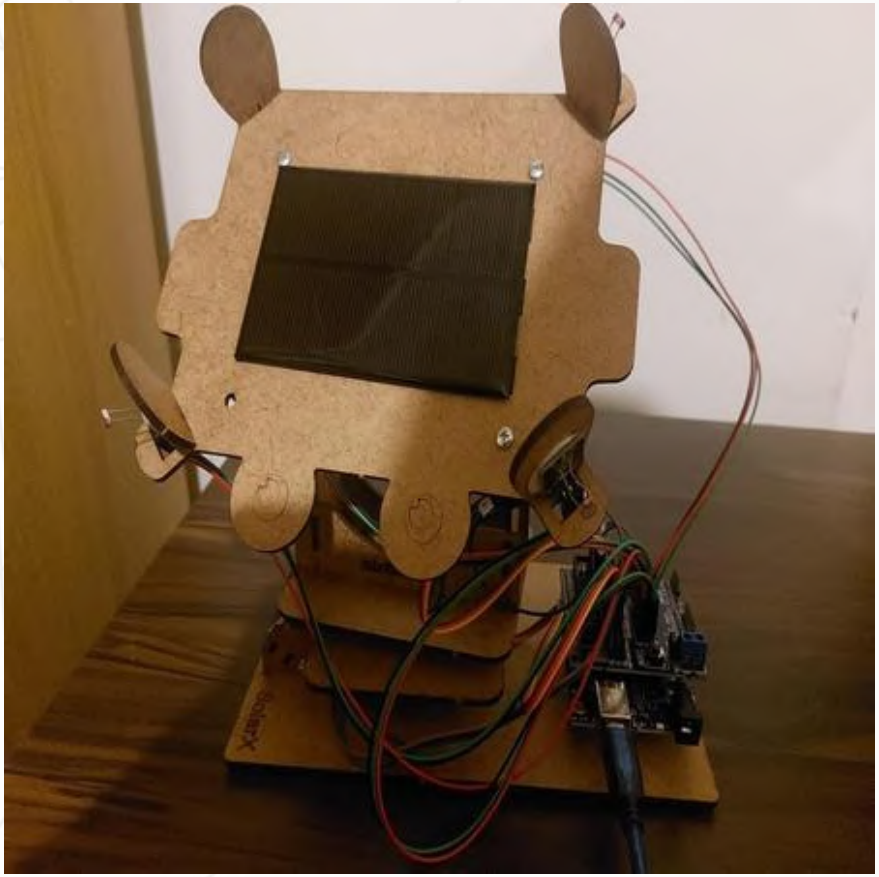
Cyber Drone



- Submitted to TAI Hangar Innovation Competition.
- Software studies are ongoing.

Graduation Projects

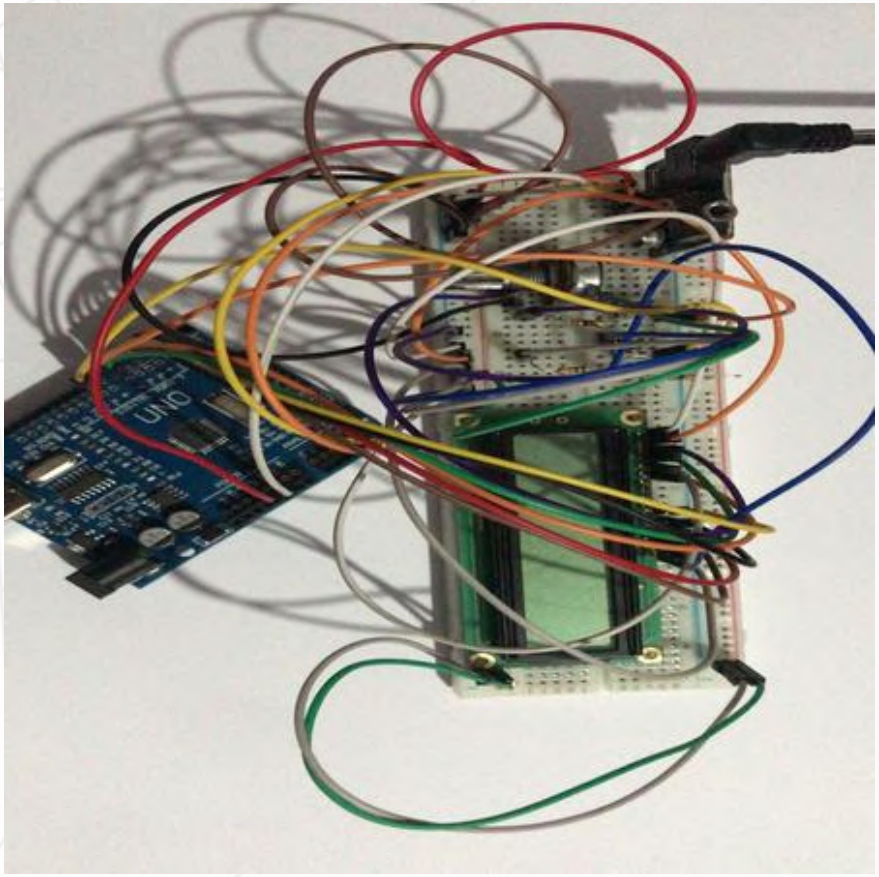
Solar Tracking System



- The solar tracking system project is an innovative solution developed to increase the efficiency of solar panels.
- A system has been developed that automatically adjusts the position of the solar panel to increase energy production by capturing the maximum amount of sunlight.
- This system, developed using Arduino and sensors, maximizes energy production by tracking sunlight in the best way.

Graduation Projects

Making FM Radio with Arduino



- This project, which can broadcast FM radio, aims to create our own broadcast using an FM transmitter circuit and to automate this broadcast with artificial intelligence.

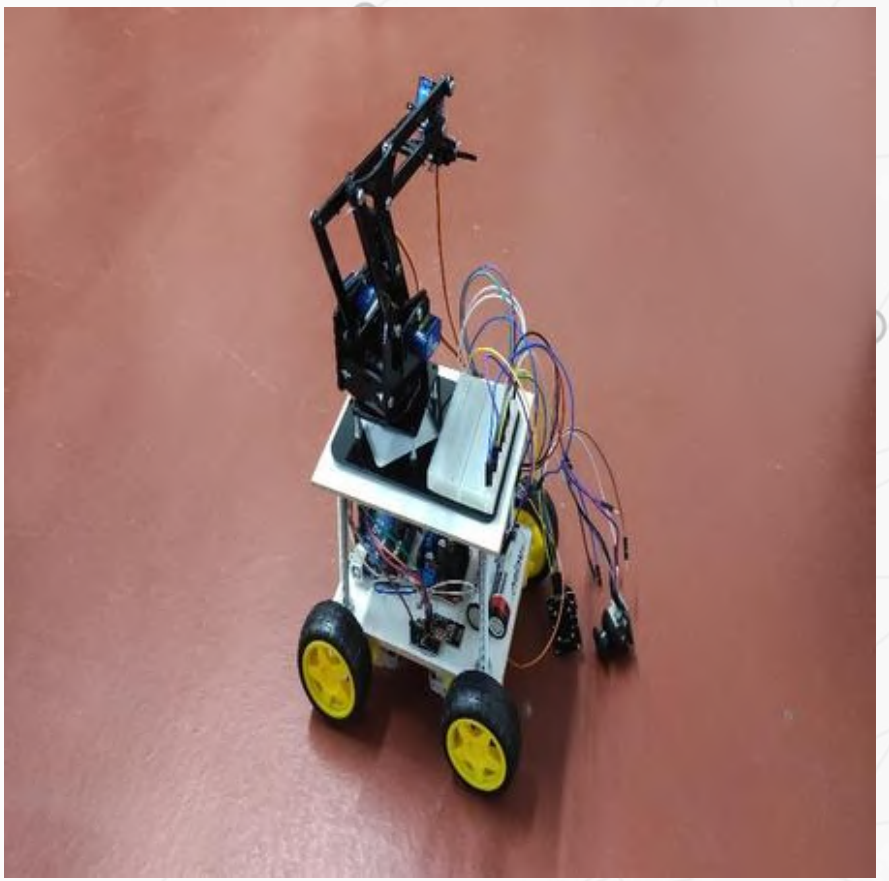
- Using the FM transmitter circuit and radio receiver, FM broadcasting has been done successfully, which shows that the project has achieved its goals.

Graduation Projects

Robot Arm Attached to Acceleration Controlled Car

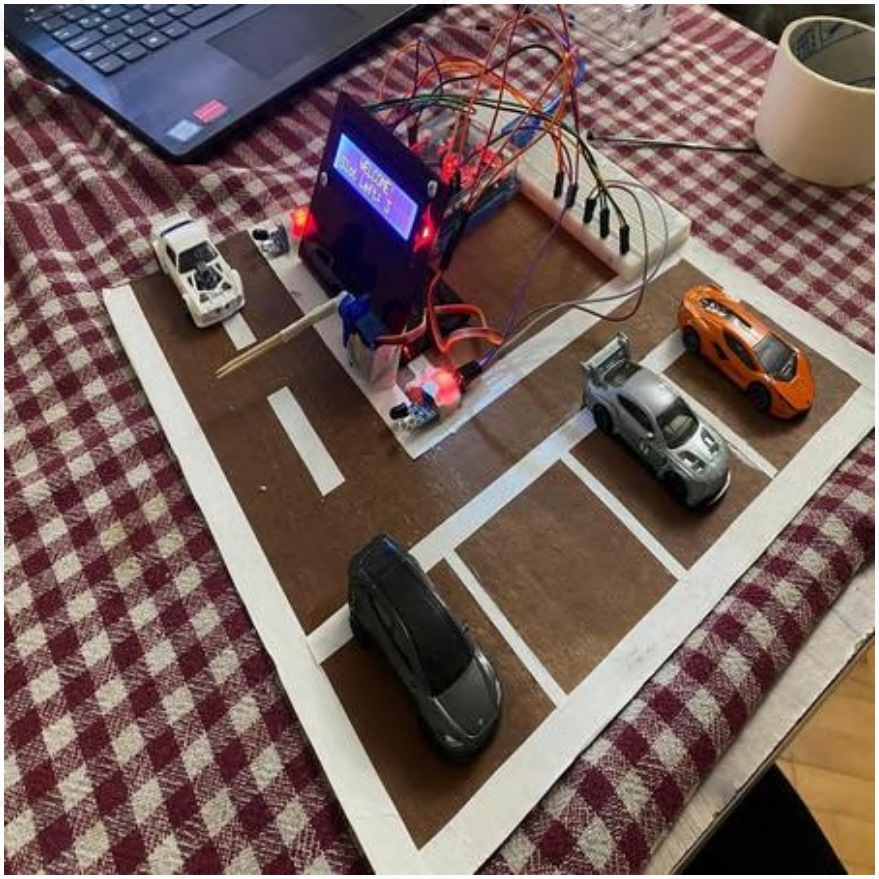
- The robot arm project, which was added to the acceleration-controlled car, was designed to explore the potential of mobile robotic systems and to develop a system that can perform various manipulation tasks.

- The integration of the acceleration-controlled car and the robot arm was successfully realized and different manipulation tasks were successfully performed.



Graduation Projects

Sensor Parking System



- The sensor parking system is a system that automatically controls vehicle entrances and exits and opens and closes barriers according to occupancy.

- This system, developed to ensure effective management of parking lots and reduce urban traffic, offers a safer and more effective parking lot management using Arduino and sensors.

ACTIVITIES

IGUCTF'24
IGUCTF'24 was organized as a comprehensive CTF competition, offering various practices in information security and aiming to improve the skills of the participants.

Hello Kotlin
An event focused on mobile innovation, aiming to teach the basic structure of Android programming and application development skills.

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Cloud 101
A series of sessions covering cloud technologies and network integration, virtualization techniques and Hypervisor VMs, data processing and storage, and Google Cloud Platform fundamentals

ACTIVITIES

Events Organized by Cyber Security Club

Anti-Cyber Harassment and Digital Security

It is aimed to increase students' digital security awareness by raising awareness about cyber harassment and teaching protection methods.

English Conversations Cyber Security

It is aimed to raise awareness of the participants and improve their English speaking and listening skills by providing information about malware types and current attacks.

ACTIVITIES

Google's Artificial Intelligence: GEMINI

The Young Software Developers and Google Developers student club organized an event aimed at deepening the participants' knowledge of artificial intelligence by introducing the technical features and practical applications of Google's new artificial intelligence model Gemini.

ACTIVITIES

CONGRESS OF COMPUTER ENGINEERING STUDENTS (BİLMÖK)

BİLMÖK, where the Information Technologies of the Future are discussed, was organized at Istanbul Gelisim University this year.

Thanks to the 2-day congress, which brought together computer engineering students and the industry, students had the opportunity to share their ideas, present projects and interact with experts in the field of engineering, as well as develop their experiences in new technologies, innovative ideas and sustainable solutions.

ERASMUS+

Within the scope of Erasmus+, our department has agreements with the following schools.

- Haute Ecole Libre de Bruxelles-Ilya Prigogine, Belgium
- International University of Vision, Macedonia
- Universitatea Nationala de Stiinta si Tehnologie Politehnica Bucuresti, Romania
- Technical University of Sofia, Bulgaria
- Todor Kableshkov University of Transport, Bulgaria
- College of Dunaujvaros, Hungary
- Bronislaw Markiewicz State Higher School of Technology and Economics in Jaroslaw, Poland
- Radom Academy of Economics, Poland
- University of Beira Interior, Portugal
- Stefan Cel Mare University of Suceava, Romania
- Technical University of Sofia, Bulgaria
- University of American College Skopje, Macedonia
- Univerzitet Singidunum, Serbia

DOUBLE MAJOR

The purpose of the double major program is to enable students who have successfully completed their major programs to study in a second major program for FREE. Students who have a GPA of 2.72 out of 4.00 in their major program and who are in the top 20% of their undergraduate/graduate program can start the second major diploma program free of charge.

MINOR

It refers to a program that enables students enrolled in a diploma program to obtain a document (minor certificate) that does not replace a diploma by taking a limited number of courses on a specific subject within the scope of another diploma program within the same higher education institution, provided that they meet the prescribed conditions. Students can apply to the minor program at the beginning of the third semester of the major undergraduate program at the earliest and the sixth semester at the latest. Students who have successfully completed all credit courses in the undergraduate program until the semester they apply to the minor program can apply.

STAKEHOLDERS

CAREER OPPORTUNITIES

Computer engineering offers broad and dynamic career opportunities in the world of technology. Professionals trained in this field can work in a variety of positions in different sectors.

- **Software Development**: Software engineers develop computer programs and applications. Many businesses, from large technology firms to start-ups, need software developers.
- **Data Science**: Data scientists analyze large data sets to extract meaningful insights. They help make strategic decisions using technologies such as machine learning and artificial intelligence.
- **Network and Systems Management**: Network engineers design and maintain computer networks, while system administrators manage IT infrastructure and fix security vulnerabilities.
- **Cyber Security**: Cybersecurity professionals protect computer systems and networks against threats. They develop security policies and create defense strategies.
- **Artificial Intelligence**: Artificial intelligence engineers develop algorithms for machines to perform human-like tasks. This field has application areas such as automation and natural language processing.

Computer engineering offers an ever-renewing and expanding range of careers. With the advancement of technology, the need for computer engineers is increasing.

WHO SHOULD CHOOSE?

It is important that people who are considering choosing the Computer Engineering profession have some basic characteristics:

- **Math and Science Curiosity**: Those who are interested and strong in math and science.
- **Problem Solving**: Those who enjoy solving complex problems and have analytical thinking skills.
- **Openness to Innovation**: Those who can adapt to the rapid changes in technology and are open to continuous learning.
- **Attention to Detail**: Those who work meticulously and pay attention to details.
- **Creativity**: Creative individuals who can develop new solutions and software.
- **Teamwork**: Those who are prone to teamwork and have good communication skills.
- **Patience and Perseverance**: Those who can work patiently and perseverance in long-term projects.

People with these characteristics can be successful in the field of computer engineering.

OUR GRADUATES

Examples of companies where students graduated from our department work:

- Blockville Digital Assets
- İstanbul Büyükşehir Belediyesi
- Mavinci Bilişim Sanayi ve Ticaret A.Ş.
- PayTR Ödeme ve Elektronik Para Kuruluşu A.Ş.
- Huawei Teknoloji
- Yapı Kredi Bankası
- Baykar
- Finansbank
- Garanti BBVA Siber Güvenlik Operasyon Merkezi
- RSU Bilişim ve Danışmanlık A.Ş.

Contact Information

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For more information, please contact the head of the department

Email: ooztas@gelisim.edu.tr