FACULTY OF ENGINEERING AND ARCHITECTURE

BULLETIN

MAY 2025

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FACULTY OF ENGINEERING AND ARCHITECTURE

NEWS FROM THE FACULTY

MONTHLY BULLETIN

MAY
2025

NEWS FROM THE FACULTY

● INDUSTRIAL ENGINEERING ●

ASSIT. PROF. MERT YILDIRIM WINS FIRST PLACE AWARD IN NATIONAL R&D AND INNOVATION COMPETITION!

Asist. Prof. Dr. Mert Yıldırım, Assistant Professor in the Department of Industrial Engineering at Istanbul Gelişim University (IGU), won first place in the "Academic Category" at the "5th National Industry-Oriented R&D and Innovation Project Competition" organized by Adana Hacı Sabancı Organized Industrial Zone (AOSB) Directorate, with his advanced material technologies project developed through a circular economy approach. A total of 182 projects from 62 universities across Turkey participated in the competition, where submissions were evaluated through a "blind review" method based on scientific merit and potential contribution to the industry. Asist. Prof. Dr. Mert Yıldırım's project on sustainable material technologies provides environmentally friendly and economical solutions, such as efficient use of resources and recycling of waste materials. Recognized for its academic originality and potential for industrial integration, the project was awarded by Adana Metropolitan Municipality Mayor Zeydan Karalar during a ceremony held on May 21, 2025, in Adana. Industrial representatives, academics, and local administrators attended the ceremony.

ISTANBUL GELISIM UNIVERSITY GRADUATE TALKS

In the graduate talk event organized by Istanbul Gelişim University Industrial Engineering Club, Buse Yüksel, a graduate of the department, came together with students. In the event held online on May 25, 2025, Yüksel shared her career journey and the experiences she gained in the sector with a sincere language. The talk inspired students preparing for business life, and the club management announced that such meetings will continue.

Istanbul Gelişim University Industrial Engineering Club continues to bring together graduates who play an active role in the sector with students. The guest of the online talk held on Sunday, May 25, 2025 was Industrial Engineering Department graduate Buse Yüksel.

NEWS FROM THE FACULTY

● CIVIL ENGINEERING ●

Assoc. Prof. Dr. Metin MEHMETOĞLU, a faculty member of the Department of Civil Engineering, has been officially appointed to the rank of Associate Professor.

ASST. PROF. DR. YASIN PAŞA ATTENDED WORKSHOP HELD UNDER TUBITAK PROJECT NO. 123Y097

A workshop organized within the scope of the TUBITAK Project No. 123Y097, titled “Hydrodynamic and Transport Modeling, Risk Analysis, and Response Strategies for Oil Spill Emergency Planning in the Gulfs of the Marmara Sea: İzmit, Gemlik, and Bandırma”, was held at Istanbul University, Beyazıt Campus.

The project, coordinated by the Department of Marine Environment, aims to develop emergency response plans for potential oil pollution events in critical regions of the Marmara Sea through advanced hydrodynamic and transport modeling, risk assessment, and intervention strategies. During the workshop, project researchers and field experts came together to discuss possible oil spill scenarios and evaluate effective mitigation and response methods specific to the İzmit, Gemlik, and Bandırma Gulfs.

Representing the Department of Civil Engineering at Istanbul Gelisim University, Asst. Prof. Dr. Yasin PAŞA participated in the workshop, contributing to academic discussions and sharing insights from his area of expertise.

ASST. PROF. DR. SAJEDEH NOROZPOUR VISITED UTTOP FOR ACADEMIC COLLABORATION

Asst. Prof. Dr. Sajedeh NOROZPOUR, a faculty member of our department, conducted an academic visit to UTTOP from May 20 to 24, 2025 as part of the institution's internationalization efforts. The visit served as a valuable opportunity to strengthen academic collaboration between the two institutions in the fields of teaching, research, and innovation.

During the visit, a joint linear algebra course was delivered in collaboration with UTTOP faculty members Marilyne MARTY-GUILLAUMONT and Anne COSSONNIERE, allowing for the exchange of pedagogical approaches across different educational systems.

In addition, Asst. Prof. Dr. Sajedeh NOROZPOUR gave a presentation introducing Istanbul Gelisim University, sharing insights into the university's strategic vision and international initiatives with UTTOP's academic staff and students. She also explored research environments such as the Virtual Reality Laboratory, where discussions on the integration of innovative technologies in education took place.

RES. ASST. OĞUZHAN MURAT HALAT PARTICIPATED IN FIELD VISIT FOR THE TRNC WATER AND SOIL RESOURCES PROJECT

Res. Asst. Oğuzhan Murat HALAT, a research assistant from our Civil Engineering Department, participated in a field visit conducted within the scope of the Turkish Republic of Northern Cyprus (TRNC) Water and Soil Resources Master Plan Report.

The visit, organized between April 27–30, 2025, was carried out under the project led by the 1773 ITU Technopark Technology Transfer Office and Dolsar Engineering, and was joined by technical teams from State Hydraulic Works (DSİ) and various company representatives from Ankara. As part of the program, the performance of the hydrological model developed within the project was evaluated by examining multiple water resources across the island.

In-depth on-site assessments were conducted in Lefkoşa, Girne, Mağusa, and Lefke, focusing on water intake structures, hydraulic engineering works, and the hydrological potential of the region. The visit provided valuable insights into the operational processes of the project and emphasized the critical importance of on-site data collection and ground-truth validation in hydrological planning.

This comprehensive field study not only contributed to the understanding of regional water and soil systems but also played a vital role in supporting the sustainable management of natural resources in the TRNC.

FIELD-BASED SURVEYING TRAINING FOR ENGINEERING STUDENTS

As part of the INS210 - Surveying course, a practical field training session was conducted by Asst. Prof. Dr. Mustafa Yurdabal APAK, a faculty member of the Civil Engineering Department at Istanbul Gelisim University. The training aimed to enhance students' hands-on experience with surveying instruments and techniques.

The field activity was carried out in designated areas within the university campus, providing students with the opportunity to apply theoretical knowledge to real-world scenarios. During the session, students actively used modern surveying equipment such as total stations, leveling instruments, and handheld GPS devices to perform angle measurements, distance calculations, and topographic surveys. They also engaged in group exercises involving the establishment of polygon points and basic data processing of collected measurements.

Through this practical training, students not only gained technical proficiency in using professional surveying tools but also developed teamwork and field organization skills. The experience helped them understand how coordinate systems are established in the field and how surveying data is collected for engineering and mapping applications.

Such field-based applications play a crucial role in the professional development of engineering students, equipping them with essential skills required in the industry. Our department remains committed to delivering hands-on educational opportunities that prepare students for the demands of professional engineering practice.

● CIVIL ENGINEERING ●

DR. MAHMOOD ALHAFADHI'S VISIT TO ISTANBUL GELISIM UNIVERSITY DEPARTMENT OF CIVIL ENGINEERING

As part of the Erasmus+ Teaching Staff Mobility Program, Dr. Mahmood ALHAFADHI, a faculty member at Dunaújváros University in Hungary, visited the Department of Civil Engineering at Istanbul Gelisim University. This visit marked a valuable contribution to the university's internationalization efforts, fostering academic exchange and institutional collaboration.

During the academic program, Dr. Mahmood ALHAFADHI delivered an in-depth seminar on welding technologies and the finite element method (FEM) to students of the department. The session provided detailed insights into modern engineering analysis and manufacturing techniques, offering students not only theoretical knowledge but also exposure to internationally applied practices. Key topics included FEM applications in industry, software-supported analysis processes, and the evaluation of welded structures.

Throughout the event, both students and faculty had the opportunity to engage directly with Dr. Mahmood ALHAFADHI, facilitating academic and cultural exchange. Such visits play a crucial role in helping students understand different approaches to engineering education worldwide and in gaining a broader international perspective on their future careers.

At the conclusion of the visit, Dr. Mahmood ALHAFADHI expressed his appreciation for the university's warm hospitality and stated his interest in participating in future collaborative projects.

● CIVIL ENGINEERING ●

SEMINAR ON GEOTECHNICAL ENGINEERING HELD UNDER THE THEME "CHALLENGES AND OPPORTUNITIES"

The Department of Civil Engineering at Istanbul Gelisim University, in collaboration with the Faculty of Engineering and Architecture and the Department of Health, Culture and Sports (SKS), organized a seminar titled "Geotechnical Engineering: Challenges and Opportunities" on Friday, May 16, 2025. The event was held in Room 290 of J Block and attracted strong interest from both students and faculty members. The invited speaker, Mr. Önder AKÇAKAL, shared his field experiences in geotechnical engineering, offering valuable insights into real-world challenges and technical solutions in the field. The seminar covered a wide range of topics, including soil investigations, foundation design, slope stability, and ground improvement techniques. In addition, current trends in the industry, job opportunities, and career advice for aspiring engineers were discussed in detail. Throughout the event, students had the opportunity to ask questions and engage directly with the speaker, benefiting from first-hand knowledge of industry practices. The interactive nature of the seminar contributed to raising professional awareness and inspired participants in shaping their future career paths.At the end of the session, the Department of Civil Engineering presented Mr. Önder AKÇAKAL with a plaque of appreciation for his valuable contributions. Based on the highly positive feedback received, the department aims to continue organizing similar events that support students' academic and professional development.

NEWS FROM THE FACULTY

● MECHATRONICS ENGINEERING ●

On Wednesday, April 9, 2025, at 13:00, a seminar titled "Fundamentals of Patents" was presented by Dr. Onur Ömer SÖĞÜT from Terra Patent as part of the "Product Development Methodology" course conducted by Assistant Professor Dr. Cansu NOBERİ. During the seminar, which drew significant interest from students, Dr. Onur Ömer SÖĞÜT provided detailed information on patenting processes.

NEWS FROM THE FACULTY

● ARCHITECTURE ●

The Yıldız Technical University, Institute of Science, Department of Architecture, History of Architecture and Theory Symposium, planned for April 24-25, 2025, was postponed due to the earthquake that occurred on April 23.
Four students from the Istanbul Gelişim University, Department of Architecture, Master's Program contributed to the study, which was held face-to-face and online on May 7 and 8 at the Auditorium on the Yıldız University Campus.

- Aya Al Zoni/ Leading Dr. Meryem M. Fındıkgil, "The Architectural Evolution of Syria: The Impact of 20th Century Political Transformations on Design and Identity"
- Sara İbrahim K al Horani/Dr. Meryem M. Fındıkgil, "The Impact of Wars on Architecture"
- Aybüke Alınak/Dr. Murat Arapoğlu, "Analysis of Bahariye Mevlevihane Semahane in Terms of Natural Lighting"
- Ghazal Mohtasehzade/Dr. Murat Arapoğlu, "Comparative Analysis of Architectural Plans of Malatya and Herat Great Mosques"

"İstanbul Gelişim Üniversitesi Uluslararası Değişim ve İşbirliği Koordinatörlüğü" eşliğinde Fas' tan bir heyet Mimarlık Bölümümüzü 8 mayıs 2025 tarihinde ziyaret etti. "Private University of Fez" Mimarlık Bölümünden 2 akademisyen ve 15 öğrenciden oluşan ekibe Bölümümüze ilişkin bilgi verildi. Gelecekte yapılabilecek işbirlikleri üzerinde konuşuldu.
Misafir Üniversitenin web adresi: https://www.upf.ac.ma/

NEWS FROM THE FACULTY

● ARCHITECTURE ●

Assistant Professor Dr. Hilay Atalay, Director of CSYBUAM, participated as an invited speaker at the Interdisciplinary Independent Living, Urban and Health Symposium-II, organized by Istanbul Gelisim University, Faculty of Health Sciences on May 15, 2025, delivering a presentation titled "City, Society, and Social Sustainability."

Assoc. Prof. Dr. İlke CİRİTCİ participated in the "First Step to the Future Career Days" organized by Bahçelievler District Police Department at M.E.B. 15 Temmuz Şehitleri Anadolu İmam Hatip High School to introduce the field of Architecture. Students were informed about the skills and knowledge they would acquire during architectural education, as well as career opportunities within the profession.

Assoc. Prof. Dr. İlke Ciritçi, Asst. Prof. Dr. Hilay Atalay, Asst. Prof. Dr. İlknur Türkoğlu, Asst. Prof. Dr. Aytek Alkaya, and Research Assistant Hazal Türkmen Yazgaç participated as jury members in the evaluation of utopia-themed posters and presentations prepared by students of the Faculty of Health Sciences, as part of the Interdisciplinary Independent Living, Urban and Health Symposium-II, held on 15 May 2025 by Istanbul Gelisim University, Faculty of Health Sciences.

Doç. Dr. İlke Ciritçi, Dr. Öğr. Üyesi Hilay Atalay, Dr. Öğr. Üyesi İlknur Türkoğlu, Dr. Öğr. Üyesi Aytek Alkaya, Araş. Gör. Hazal Türkmen Yazgaç ; İstanbul Gelişim Üniversitesi, Sağlık Bilimleri Fakültesi tarafından 15 Mayıs 2025 tarihinde düzenlenen Disiplinlerarası Bağımsız Yaşam, Kent ve Sağlık Sempozyumu-II kapsamında, Sağlık Bilimleri Fakültesi'nin öğrencileri tarafından hazırlanan ütopya poster ve sunumlarının değerlendirilmesine jüri üyesi olarak katılım sağlamışlardır.

● ARCHITECTURE ●

TECHNICAL VISIT FROM THE DEPARTMENT OF AERONAUTICAL ENGINEERING TO THE ISTANBUL NATURAL GAS COMBINED CYCLE POWER PLANT

On May 13, 2025, a technical visit was organized to the Istanbul Natural Gas Combined Cycle Power Plant located on the Avcılar campus, with the participation of students from the Department of Aeronautical Engineering and faculty members Prof. Dr. A. Cihat Baytaş and Research Assistant Özlem Yalçın.The visit aimed to provide students with an opportunity to observe the power cycles they study in theoretical courses through real-world applications and to gain insight into the operation of the plant. During the visit, students examined the combined cycle systems operating with both steam and natural gas at the Ambarlı Thermal Power Plant—one of Turkey's largest electricity generation facilities—and were informed about the overall electricity generation process.

FACULTY OF ENGINEERING AND ARCHITECTURE

ACTUEL TOPICS IN ENGINEERING AND ARCHITECTURE

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● COMPUTER ENGINEERING ●

TURKEY ACHIEVES BREAKTHROUGH IN CYBERSECURITY: DEVELOPMENT OF INDIGENOUS QUANTUM CRYPTOGRAPHY SYSTEM

Turkey has made a significant advancement in the field of computer engineering and cybersecurity. On May 27, 2025, a domestically developed quantum cryptography system was unveiled at a technology summit in Istanbul by a Turkish technology startup. This innovative system is designed to enhance data security against the potential vulnerabilities posed by quantum computers, which are capable of compromising traditional encryption methods.

The system leverages Quantum Key Distribution (QKD) technology, utilizing principles of quantum mechanics to ensure robust protection against cyber threats. QKD enables the secure exchange of cryptographic keys, with any unauthorized interception immediately detectable due to the inherent properties of quantum states. This technology is particularly critical for safeguarding sensitive data in sectors such as finance, healthcare, defense, and public services.

ACTUEL TOPICS IN ENGINEERING AND ARCHITECTURE

● COMPUTER ENGINEERING ●

A spokesperson from the project team stated, “Quantum cryptography represents the future standard for cybersecurity. Turkey’s leadership in this domain not only strengthens national security but also positions the country as a significant contributor to global technology exports.” The development process involved the creation of proprietary algorithms and quantum communication protocols by Turkish engineers. The system has demonstrated a 30% improvement in security compared to conventional encryption methods, as evidenced by initial results from a state-supported pilot program. These tests, conducted in critical domains such as banking and healthcare data protection, confirmed the system’s superior performance and reliability, surpassing international benchmarks. A notable aspect of this initiative is its reliance on domestically produced software and hardware components, aligning with Turkey’s strategic goal of reducing dependency on foreign technology. Furthermore, the project includes educational initiatives aimed at training the next generation of computer engineers in quantum technologies, fostering expertise in this emerging field. The technology is slated for commercial deployment in 2026. Experts anticipate that this system could establish Turkey as a global hub for cybersecurity innovation. International interest is already evident, with several European and Asian countries initiating discussions for potential collaborations. This milestone underscores Turkey’s growing prominence in the global cybersecurity landscape and its potential to shape the future of quantum technology applications.

INDUSTRIAL ENGINEERING AGENDA 2025: DIGITAL TRANSFORMATION, ARTIFICIAL INTELLIGENCE AND SUSTAINABILITY

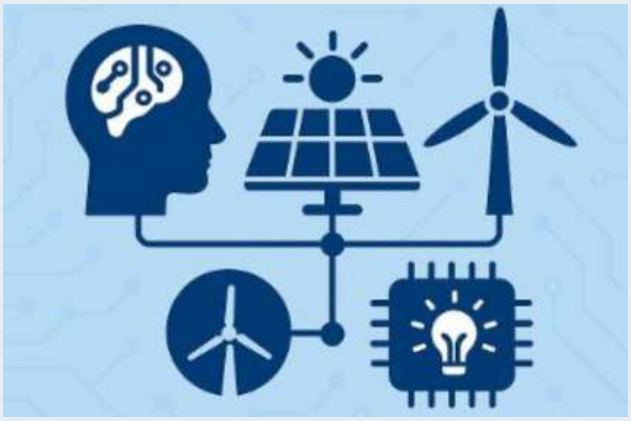
2025 stands out as a period in which the discipline of industrial engineering is rapidly evolving and digital transformation is at the forefront in many areas. With the impact of technological developments, the scope of industrial engineering is expanding and transforming in many areas, from production to logistics, from healthcare to sustainable urban planning.

Technologies such as artificial intelligence, machine learning and data analytics are no longer just supporting tools; they are at the center of decision-making processes. Faster, more accurate and more efficient solutions are being developed in areas such as production planning, demand forecasting, quality control and process optimization thanks to these technologies. These developments are transforming the role of industrial engineers into strategic decision-makers.

On the other hand, the issue of sustainability has become an integral part of the industrial engineering agenda in 2025. Issues such as reducing carbon footprint, energy efficiency and circular economy are among the priorities of engineering solutions. In this context, studies on green production systems, sustainable supply chains and environmental impact analyses continue to increase.

As of 2025, industrial engineering is being repositioned as a profession that not only improves systems but also shapes the future. This transformation, which is at the center of concepts such as digitalization, artificial intelligence, and sustainability, offers the discipline both great responsibilities and important opportunities.

IN ELECTRICAL AND ELECTRONICS ENGINEERING: ARTIFICIAL INTELLIGENCE, RENEWABLE ENERGY AND SMART SYSTEMS



As of 2025, the technology-focused transformation in the field of electrical and electronics engineering has gained great momentum. Many new technologies, especially artificial intelligence and the internet of things (IoT), have become central to engineering applications; and have paved the way for innovative solutions in energy efficiency, smart transportation systems, communication infrastructures and electronic design processes.

Artificial intelligence-supported prediction systems and automatic decision-making algorithms enable the development of more sustainable models, especially in energy production and distribution. Smart grids, electric vehicle infrastructures and autonomous systems are among the main focus areas affecting both the software and hardware dimensions of engineering.

Electrical engineers have great responsibilities, especially in the integration and management of renewable energy sources; studies are focused on the stable distribution of energy obtained from solar, wind and hydroelectric sources.
In order to adapt to this change, universities are updating their curricula in topics such as microcontrollers, energy systems, communication technologies and embedded systems. In addition, projects carried out in collaboration with the industry provide students with the opportunity to face real-world problems and produce solutions.

As of 2025, electrical-electronic engineering has become a discipline that is not limited to power systems and circuit design; it works integrated with data science, artificial intelligence and sustainable technology solutions.

SOFT ROBOTICS: TECHNOLOGY STRETCHING THE MECHATRONIC FRONTIERS OF THE FUTURE

Mechatronics engineering is a versatile field that brings together different engineering disciplines to shape technology. One of the branches of this discipline that attracts attention today is soft robotics. Compared to the rigid and mechanical structures of classical robotic systems, soft robots are flexible systems inspired by the nature of living organisms. In this way, it has become possible to produce robots that can both come into direct contact with humans and work in narrow, complex spaces.

What is Soft Robotics?

Soft robotics is an approach to robotics in which traditional articulated structures are replaced by pneumatic (air-pressurized), electroactive polymer or liquid-filled actuators, often using soft materials such as elastomers, silicon, hydrogels. Rather than motors and gears, these robots contain structural elements that are driven by pressure-modulated chambers or magnetic/electrical fields. For example, air chambers placed in a soft robot fingertip can perform grasping by opening and closing according to the given pressure.

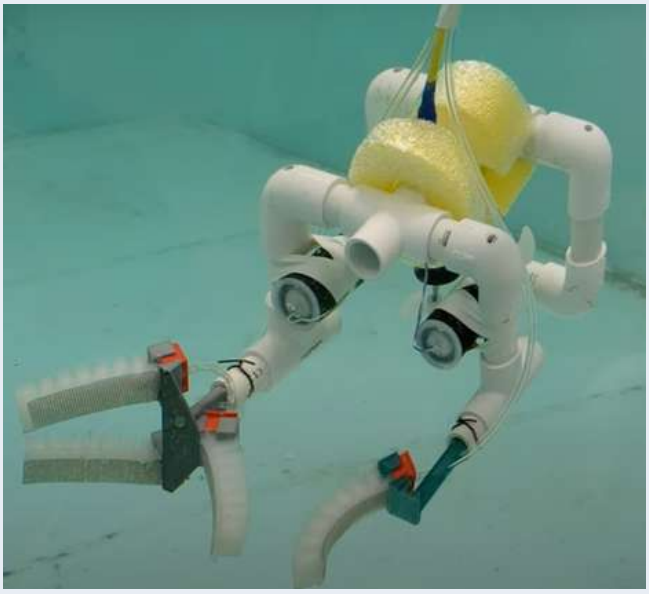


Figure 1: Handling delicate objects with soft gripper tips.

ACTUEL TOPICS IN ENGINEERING AND ARCHITECTURE

● MECHATRONICS ENGINEERING ●

Technical Application Areas

1. Medical Robots:
Surgical robots designed with soft materials can reach internal organs without damaging human tissue. In some systems, fluid-filled channels are guided by a magnetic field, allowing maneuvering inside the body with millimeter precision.

2. Wearable Systems:
Wearable skeletal systems powered by pneumatic actuators can be designed to enable paralyzed patients to take steps. The key components in these systems air pump, flexible hoses and silicone chambers integrated into textiles.

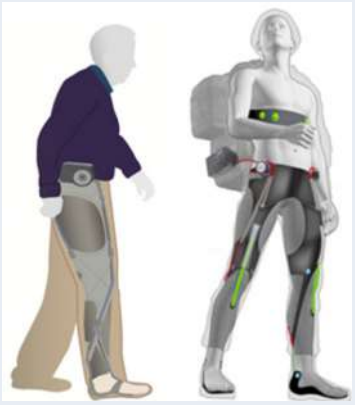


Figure 2: ReWalk 6.0 Wearable Robotic Skeleton.

Figure 3: Vegetable transportation with soft gripper

Figure 4: Vinebot: search and rescue robot.

3. Agricultural Robots:
Handles with soft grippers can pick delicate fruit without damaging it. Vacuum-based suction tips work with the elastomers surrounding the fruit to ensure maximum fit.

4. Search and Rescue:
Flexible snake-like robots can crawl under debris and scan the environment with sensors. These robots can curl and move forward with actuators built into their segmented structures.

ACTUEL TOPICS IN ENGINEERING AND ARCHITECTURE

● MECHATRONICS ENGINEERING ●

Material Selection in Soft Robotics

The success of soft robots is highly dependent on the materials used. Among the most commonly preferred materials are silicone-based elastomers (e.g. EcoFlex, Dragon Skin). These materials offer advantages such as high flexibility, biocompatibility and easy formability.

Hydrogel-based robotic structures are particularly suitable for robots operating in aquatic environments. In addition, soft structures integrated with textile materials increase the comfort of wearable systems. The choice of material determines not only the flexibility of the robot, but also its durability and responsive behavior.

Advanced Control Methods

Soft robots are much more difficult to control than classical mechanical systems. Actuator behavior is non-linear and the response of the system can change over time. For precise positioning, closed-loop control systems are therefore used in combination with flexible sensors. Thanks to machine learning algorithms, these robots are able to adapt their behavior according to environmental conditions.

Conclusion

Soft robotics is not only a technological innovation, but also a way to design systems that are more in harmony with people and nature. Mechatronics engineering plays an important role in this field, developing new materials, control algorithms and applications. This technology will enable the next generation of robots to be not only powerful, but also gentle and adaptable.

GIT'S LESSER-KNOWN BUT POWERFUL TOOLS: LIFE-SAVING COMMANDS FOR DEVELOPERS

In the world of software development, Git goes beyond version control and offers developers a comprehensive ecosystem for managing code with precision. However, most developers only use basic Git commands. In fact, Git includes many lesser-known yet extremely useful and powerful commands that can transform the development workflow.
In this article, we examine some of Git's "underrated" commands that can be true lifesavers for developers.

1. git stash: Pocket Your Changes

While coding, you may need to switch branches but aren't ready to commit your changes. *git stash* temporarily stores your modifications and gives you a clean slate to work on.

git stash
This command saves all current changes. Later, you can reapply them with:

git stash pop

2. git reflog: The Time-Travel Logbook

Accidentally deleted a branch or reset a commit? Don't worry. *git reflog* keeps a log of all your actions in the repository.

git reflog

This command helps you view previously checked out branches, reset commits, and more—allowing recovery of what seemed lost.

3. git blame: Find the Line's Author

Want to know who wrote a specific line of code and when? *git blame* shows the author and the commit for each line in a file.

git blame <filename>

4. git bisect: Bug Detective

git bisect uses a binary search algorithm to find which commit introduced a bug. After marking one commit as "good" and another as "bad," Git narrows down the exact cause.

git bisect start
git bisect bad
git bisect good <commit_hash>

5. git cherry-pick: Apply a Specific Commit

Sometimes you only want to take one specific commit from a branch. No need to merge the whole branch—use:

git cherry-pick <commit_hash>

This applies the exact commit to your current branch.

Git is more than just a version control tool—it's a system that supports continuity, efficiency, and traceability. Commands like git stash, reflog, blame, bisect, and cherry-pick reveal the depth of Git's functionality. Learning and using these tools helps developers become more effective, analytical, and confident in managing even the most complex projects.

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ACADEMIC AND SCIENTIFIC ACTIVITIES

● COMPUTER ENGINEERING ●

A recent article titled “Optimization of Fixed Supported Castellated Steel Beams”, co-authored by Asst. Prof. Dr. Ahmad Reshad NOORI, Chair of the Civil Engineering Department, Asst. Prof. Dr. Aylin Ece KAYABEKİR, and their Ph.D. student Marwan Abdulkareem Shakir ALBAYATI, has been published. The study explores the optimization of castellated steel beams, which are increasingly favored in structural applications due to their aesthetic appeal, geometric versatility, and cost- and performance-efficient characteristics. These beams are particularly advantageous for improving flexural resistance without increasing overall weight. The research aimed to minimize maximum vertical deflection as the objective function by determining the optimal cross-sectional dimensions using three advanced optimization algorithms: Grey Wolf Optimization (GWO), Particle Swarm Optimization (PSO), and Differential Evolution (DE). The study also evaluated three different steel grades: S235, S255, and S355. The results showed that PSO and DE produced closely aligned outcomes, while GWO provided slightly different yet applicable solutions. Overall, all three algorithms demonstrated strong potential for structural engineering optimization applications.

A new article by Asst. Prof. Dr. Yasin PAŞA, a faculty member of the Department of Civil Engineering, titled “Evaluation of Simulation Results of HEC-RAS Coupled 1D/2D and 2D Modeling Approaches Through Scenario-Based Analysis” has been published. The study presents a scenario-based comparison of widely used 1D, 2D, and coupled 1D/2D flood modeling approaches, addressing a notable gap in comparative research on these methods. The Dinsiz Stream Basin was selected as the study area due to its proximity to industrial zones and residential areas, and its vulnerability to flood risk. Given the insufficiency of flow data in the basin, long-term rainfall data were used. Flood hydrographs were generated for 50, 100, 200, and 500-year return periods using statistical methods, and simulations were carried out using HEC-HMS and HEC-RAS to develop and compare both coupled 1D/2D and pure 2D models. The results showed that maximum water levels were higher in the coupled 1D/2D model compared to the 2D-only model. The study also highlighted the potential for significant flood damage, particularly in the vicinity of the second organized industrial zone. The accuracy of the model was verified using photographs from the actual flood event that occurred in 2021, supporting the reliability of the findings.

ACADEMIC AND SCIENTIFIC ACTIVITIES

● MECHATRONICS ENGINEERING ●

The article titled "CFD Investigation on Heat Transfer Performance of Different Pipe Geometries at Various Reynolds Numbers" by Dr. Haydar Kepekçi, a faculty member in the Department of Mechatronics Engineering, has been published in the Q4-impact factor SCI-indexed journal Thermal Science.

● ARCHITECTURE ●

Asst. Prof. Dr. Oluwagbemiga Paul Agboola with the following Co-authors: Assoc. Prof. Dr. Hourakhsh Ahmad Nia; Asst. Prof. Dr. Abdulaziz Alsharif and Asst. Prof. Dr. Murat Arapoğlu participated and presented a conference paper entitled 'Empowering Urban Sustainability Through Higher Education: A Strategic Framework for Student-Driven Initiatives at Istanbul Gelisim University'. at 8th International Conference of Contemporary Affairs in Architecture and Urbanism (ICCAUA-2025), Alanya University, Between 8th and 9th May, 2025, Alanya. Türkiye. The Conference Proceedings with ISBN:978-625-95249-1-7. is attached and Available @
https://www.iccaua.com/page/home

Asst. Prof. Dr. Oluwagbemiga Paul Agboola with Co-author Assoc. Prof. Dr. Hourakhsh Ahmad Nia participated and presented a conference paper entitled 'Digital Inclusion and Sustainability in Nigerian Urbanism: Adaptive Service Frameworks for Smart City Resilience'. at 8th International Conference of Contemporary Affairs in Architecture and Urbanism (ICCAUA-2025), Alanya University, Between 8th and 9th May, 2025, Alanya. Türkiye. The Conference Proceedings with ISBN:978-625-95249-1-7. is attached and Available @
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ALANYA UNIVERSITY

CERTIFICATE OF PRESENTATION

This is to certify that

Asst. Prof. Dr. Oluwagbemiga Paul Agboola
and Assoc Prof. Dr. Hourakhsh Ahmad Nia

has successfully participated in and presented his/her/their paper entitled

Digital Inclusion and Sustainability in Nigerian Urbanism:
Adaptive Service Frameworks for Smart City Resilience

at the 8th International Conference on Contemporary Affairs in Architecture and Urbanism, organised by Alanya University in collaboration with the University of Tehran, held in Alanya, Türkiye, on 8-9 May 2025.

• TAG •

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