

Team Techno: A Passionate Journey in Robotics

Origins and Inspiration:

Team Techno's story began in 2015, fueled by the collective passion of a group of undergraduate students at Ghulam Ishaq Khan Institute of Engineering Sciences and Technology (GIKI). Inspired by the burgeoning automation wave of the 4th Industrial Revolution, they envisioned a team dedicated to advancing robotics and pushing the boundaries of innovation. Their dedication and determination culminated in the formation of Team Techno, marking the beginning of a remarkable journey.

From Humble Beginnings to a Thriving Force:

Team Techno started small, with just a handful of enthusiastic students. However, their dedication and collaborative spirit fostered rapid growth. Today, the team boasts a vibrant network of over 30 alumni contributing their expertise from across different continents. Furthermore, over 50 active members are passionately engaged in various technical and non-technical domains, ensuring Team Techno's continued progress.

Technical Expertise and Innovation:

At the heart of Team Techno lies a strong foundation in various technical domains. These include:

- **Electrical Engineering:** This domain focuses on the robots' hardware, encompassing integrated circuits, Arduino boards, ESP32 microcontrollers, and other crucial components. Led by Director Hassan Khan, the electrical team is responsible for the design, selection, and implementation of the robots' electrical systems.
- **Mechanical Engineering:** Spearheaded by Director Anees Shehbaz, this domain delves into the design and manufacturing aspects of the robots. From conceptualizing the robots' structure to meticulously crafting each component, the mechanical team ensures the robots are robust and functional.
- **Autonomy and Robotics Integration:** Led by Director Maham Shehzadi, this domain tackles the complexities of robot control and decision-making. The team focuses on developing efficient path planning algorithms, maze solvers, line-following techniques, and RC car control systems, ultimately enabling the robots to navigate their environments autonomously.

Beyond the Technical: Supporting Infrastructure

Team Techno recognizes the importance of a strong support system beyond the technical realm. The team thrives on the dedication of members contributing to these key non-technical domains:

- **Sponsorship:** Managed by Abdur Rehman (Team Manager), this domain establishes partnerships with companies aligned with Team Techno's goals. The sponsorship team

tailors sponsorship packages to meet the needs of various companies, fostering mutually beneficial collaborations.

- **Marketing:** This domain, led by a dedicated team, focuses on creating engaging social media content and marketing strategies to attract sponsorships and raise public awareness of Team Techno's achievements.
- **Documentation:** Headed by Director Haris Cheema, this domain ensures meticulous documentation of every aspect of the robots. From detailed electrical schematics to comprehensive algorithm explanations and design specifications, the documentation team maintains a valuable knowledge base for future projects and team members.

Showcasing Excellence: A Legacy of Competition Success

Throughout its journey, Team Techno has actively participated in numerous national robotics competitions, consistently demonstrating its prowess. These include prestigious events like:

- IEEE-GIKI Chapter's NEO (National Electronics Olympiad)
- NUST-Islamabad's NERC (National Engineering Robotics Contest)
- UET Peshawar YRT (Youth Robotics Competition)
- Kalam Robo Tech

Team Techno proudly holds the distinction of being the recent winners of the National Electronics Olympiad, a testament to their dedication and innovative spirit.

Setting Sights High: International Ambitions in 2025

Team Techno is taking a bold step towards international recognition by gearing up for participation in two prestigious international competitions in 2025:

- **University Rover Challenge (URC):** Held in the USA, the URC is a premier competition designed to challenge university teams in building rovers capable of navigating the harsh Martian terrain. Participating in the URC will offer Team Techno an invaluable opportunity to:
 - Benchmark their skills against top robotics minds from around the world.
 - Gain valuable experience in competition strategy, rover design optimization, and adapting to simulated Martian environments.
 - Potentially secure recognition and open doors for future collaborations or sponsorships due to a strong performance.
- **European Rover Challenge (ERC):** Taking place in Poland, the ERC is another leading competition for university robotics teams. Similar to the URC, the ERC challenges teams to design and build autonomous rovers capable of overcoming obstacles and performing simulated scientific tasks. Participating in the ERC will allow Team Techno to:
 - Showcase their skills on a European stage, potentially competing against teams from across the continent.
 - Gain recognition and potentially attract new members, sponsors, and research opportunities through a successful showing.

This pursuit of international competition represents a significant milestone in Team Techno's journey. Their dedication to continuous learning, innovation, and collaboration positions them for continued success in the exciting world of robotics.

Executive Council for Tenure 2024-25:

- **Captain:** Ali Ahmed Mir
- **Manager:** Abdur Rehman
- **Technical Lead:** Saud Ahmed
- **Director Mechanical:** Anees Shahbaz
- **Director Electrical:** Hassan Khan
- **Director Autonomy & Robotics Integration:** Maham Shehzadi
- **Director Documentation:** Haris Cheema
- **Executive Member:** M. Ibrahim