Vision Quest: An introduction to the libraries of OpenCV

The IEEE SPS student chapter at the Muffakham Jah College of Engineering and Technology conducted a hands-on workshop on the usage of OpenCV libraries of Python on the 26th of July at the R&D Lab at MJCET. More than 25 students were in attendance for the event.

Initiation

The workshop was started at 11:00 AM with the recital of the verses of the Holy Quran and it's translation by Syed Umair, for an auspicious beginning to the event

Introduction to SPS

The recital was followed by an introduction to Signal Processing and it's importance in technology and the modern age by Ikram Hyderi, Vice-Chair of IEEE SPS student chapter at MJCET

OpenCV basics and image processing

The Chair of IEEE SPS student branch at MJCET, Asma Khanam, began the introduction and explained the applications of OpenCV.

Image manipulation techniquies such as combining, adding, subtracting two images using modules such as cv2 and numpy were used. Each student present was able to have a hands-on experience with their own system
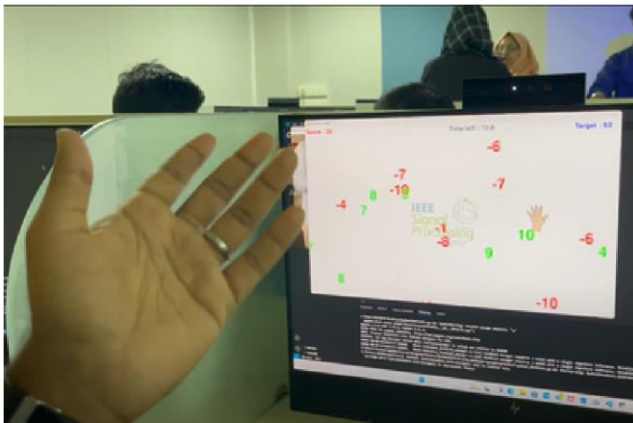
Special Project using video processing

After lunch, the special project was started by Mahaboob Sana, webmaster of IEEE SPS student chapter at MJCET. The project involved using facial detection, video processing and real-time processing modules and functions.

Students were able to effectively apply facial filters, creating snapchat filters and it's applications from scratch using only OpenCV and it's video processing modules in Python

Numbers game

A numbers game which involved using the MediaPipe framework and the openCV and numpy libraries was made.

The MediaPipe framework was used for hand tracking functionalities, OpenCV for the image processing and Numpy for the numerical and array operations.

The attendees were able to create and play the game where hand tracking was used to capture numbers to score points.
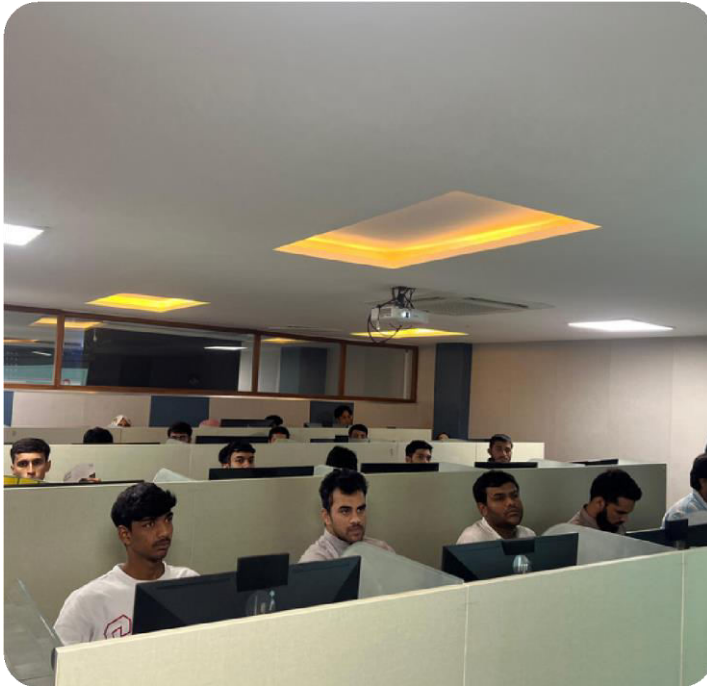
Balloon pop game

A balloon pop game which involved the MediaPipe framework, OpenCV, numpy, pygame and the random library were used.

The MediaPipe framework was used for the hand tracking, OpenCV for the video processing, numpy for the array and numerical operations, pygame to generate the virtual environment and the random library to randomly generate the balloons.

All attendees were able to successfully execute the python programs for image and video processing, had a very fun and engaging time playing the games they made and got a worthwhile hands-on experience with the OpenCV library.

The first event of the IEEE Signal Processing Society student chapter at MJCET wrapped up by 3:45 PM and was a great success with the student chapter team preparing an entertaining and informative workshop. More such workshops, events and collaboration are planned in the coming months.

Fusion - A project expo

The **IEEE SPS team at MJCET** in collaboration with the **IEEE SPS Hyderabad section and the Instituition's Innovation Council**, conducted a project expo under the umbrella of Electrovanza - An ECE tech expo, at the Ghulam Ahmed Hall in MJCET

The event took place on the 26th of April, from 9:30 AM to 1:30 PM on the second day of Electrovanza

The SPS student branch team at MJCET successfully organized an impressive project expo. This event gave creative students a valuable platform to show off their technical ideas and skills.

The chief guests of the event were: Mr. Zafer Javeed, Chairman of the Sultan-Ul-Uloom Educational Society and Dr. Mahipal Singh Rawat, principal of MJCET. The principal of Sultan-Ul-Uloom Public School also graced the occasion, along with several other dignitaries from sister institutions who came to witness our "Fusion - A Project Expo." Their presence added prestige to the event and demonstrated strong institutional support for student innovation.

Over 20 teams joined the competition, with some dedicated participants traveling from nearby states like Tamil Nadu to present their work. This wide participation showed how popular and important the expo had become in the region.

The event featured two main categories: **Software and Hardware**. Students displayed a range of projects from mobile

apps and computer programs to circuit designs and working prototypes.

Judges carefully reviewed all the displays, looking at how innovative, well-made, and useful each project was. They also considered how well students presented their work.

The best projects received awards from a total prize pool of 20,000 rupees. These prizes recognized the hard work and clever thinking of the top teams.

Overall, the expo was a great success. It highlighted the technical skills of students and gave them a chance to gain recognition, receive feedback, and make connections in the field.

The **1st prize** in the Hardware category was won by **Fetchers** - Abdul Roshan and Mirza Abrar Baig

The **2nd prize** in the Hardware category was a tie between
Rover Vision - Khaja Hameedullah, Mohammed Noman,
Mohammed Zakwan Khan

Technical Error - Mohammed Saifuddin , Syed Rehan and Danish

The **1ˢᵗ prize** in the Software category was won by **Dhanasri** - Soumika Addala

The **2ⁿᵈ prize** in the Software category was a tie between
Atom - Mohammed Ibrahim Nasir
Ethical Crackers - Mohammed Faizan Khan and
Naveedullah Khan

MUFFAKHAM JAH COLLEGE OF ENGINEERING AND TECHNOLOGY

The Sultan Ul-Uloom Education Society,Banjara Hills,Hyderabad,500034 || www.mjcollege.ac.in

DEPT OF ELECTRONICS AND COMMUNICATION ENGINEERING & IEEE MJCET SB proudly presents

National Level Annual Fest

ELECTROVENZA 2K25

C E R T I F I C A T E
of achievement

This certificate is presented to

SOUMIKA ADDALA

For securing the ___1st___ position in the event ___FUSION-PROJECT EXPO___ held as part of ELECTROVENZA 2K25 – the National Level Annual Fest organized by the Department of Electronics and Communication Engineering in association with the IEEE MJCET Student Branch on 25th and 26th April 2025 at Muffakham Jah College of Engineering and Technology, Hyderabad. This award recognizes their exceptional performance and dedication.

Dr. MAHIPAL SINGH RAWAT
PRINCIPAL MJCET

Dr.AYESHA NAAZ
HEAD OF ECED
IEEE MJCET
BRANCH COUNSELLOR

Bytes Beyond Bandwidth

Date/Duration: 29th November / 2hrs

Host Organisation: Self (IEEE Signal Processing Society MJCET) in collaboration with Lamakaan

Organizers:

1. Asma Khanam (Chair, Signal Processing Society MJCET)
Email: 160421735007@mjcollege.ac.in
Contact: +91 7981165219

2. Ikram Hyderi (Vice Chair, Signal Processing Society MJCET)
Email: 160421735022@mjcollege.ac.in **Contact:** +91 6300247977

Target Audience: CSE, IT, AIML, AIDS and ECE

Number of Participants: 100+ members
The IEEE SPS Chapter at MJCET, in partnership with

Lamakaan, conducted an insightful event titled "Bytes Beyond Bandwidth", exploring the principles of disastertime communication.

The session covered how communication links are established during emergencies through frequency synchronization and antenna alignment at geographically separated locations.

Key technical concepts such as signal propagation, and the role of adaptive antennas in mitigating communication breakdowns were discussed.

The event, which had more than 100 participants in attendance, provided them with a deeper understanding of radio frequency communication in disaster scenarios, emphasizing the importance of robust and resilient systems

By integrating technical knowledge with real-world applications, the event aligned with IEEE's mission of advancing technology to address critical global challenges.

Report-02: IEEE SPS Inauguration

Introduction: Initiation of Event

The event began with Abid Salman reciting few verses from the Holy Quran to start the proceedings, creating a spiritually charged atmosphere for the event. The guests:

1. Dr. Anil Kumar Vuppala, Secretary IEEE SPS, from IIIT -Hyderabad.
2. Dr. Sharat Chandra Inguva, Treasurer IEEE SPS from Matrusri Engineering College.
3. Dr. Mahipal Singh Rawat, Principal, MJCET.
4. Dr. Ayesha Naaz, Head of the ECE Department.
5. Mrs. Suchirtha Boda, Assistant professor, ECED.

Profile Reading:

This was then followed by **Profile Reading** of esteemed guest, Dr. Anil Kumar Vuppala, Secretary IEEE SPS, from IIIT -Hyderabad by Vice-Chair, IEEE SPS, Ikram Hyder and Treasurer, M.A. Akheel.

Background:

1. Anil Kumar Vuppala received his B.Tech. in Electronics and Communications Engineering from JNTU, Hyderabad in 2005.
2. M.Tech. from NIT Kurukshetra in 2007,
3. PhD in Signal Processing from IIT Kharagpur in 2012.
4. Assistant Professor at IIIT Hyderabad from March 2012 to June 2019.
5. Associate Professor July 2019 – Present.

Achievements:

1. Published over 100 articles.
2. Handled 2 sponsored projects.
3. Completed 7 funded projects.
4. Currently supervises 7 PhD and 9 MS students.
5. Delivered over 75 invited talks

.

Profile Reading was followed by honoring the Chief Guest with presentation of Bouquet.

- Samrien Erum presented a bouquet to the Chief Guest Dr. Anil Kumar Vuppala.
- Asna Khanam presents a Bouquet to Guest of Honour, Dr. Sharat Chandra Inguva.

This was then followed up with Academic Plan announcement by Mrs. B.Sucharita, Faculty Advisor, IEEE SPS.

- Dr Ayesha Naaz, HOD, ECE-Dept, MJCET, was invited upon stage to deliver the welcome speech and to enlighten the students with motivational speech. B.Sucharita, faculty advisor, IEEE-SPS MJCET addressed the audience to explain the academic plan.
- Following that we had Mr.Rawat, Principal, MJCET addressing the audience with delightful and enlightening words.

IEEE Signal Processing Society was inaugurated. Following this B.Sucharita Maam announces the Governing Body for IEEE SPS.

1. Principal felicitates the Chief Guest with token of appreciation.
2. Dr. Ayesha Naaz felicitates the Guest of Honour with a token of appreciation.

- Dr Anil Kumar enlightened the audience on the topic: " AI in Speech "

- Dr. Sharat Chandra Inguva to spoke a few words on Benefits of SPS Membership.

- The IEEE SPS MJCET chapter held a full-day workshop on OpenCV, covering topics such as image processing, video processing, and building fun games and projects. The dignitaries were requested to give the certificates to the participants, speakers, and volunteers.

Vote of Thanks:

As the inaugural ceremony of the IEEE Signal Processing Society (SPS) chapter at MJCET drew to a close, a vote of thanks was delivered. The speaker expressed sincere gratitude to Dr. Anil Kumar Vuppala for his enlightening talk on "AI in Speech," which offered valuable insights and knowledge. Special thanks were extended to Dr. Sharat Chandra Inguva for his informative address on the benefits of SPS membership, highlighting the significant advantages and opportunities available to members. The speaker acknowledged the presence and support of distinguished guests, faculty members, and students, emphasizing their crucial role in the event's success. The efforts of the organizing committee and volunteers were also recognized for their hard work and dedication in making the ceremony possible. With the conclusion of the vote of thanks, the official commencement of the IEEE SPS chapter at MJCET was marked, and anticipation for future events and continued support was expressed. The speaker concluded by thanking everyone for contributing to the event's grand success.

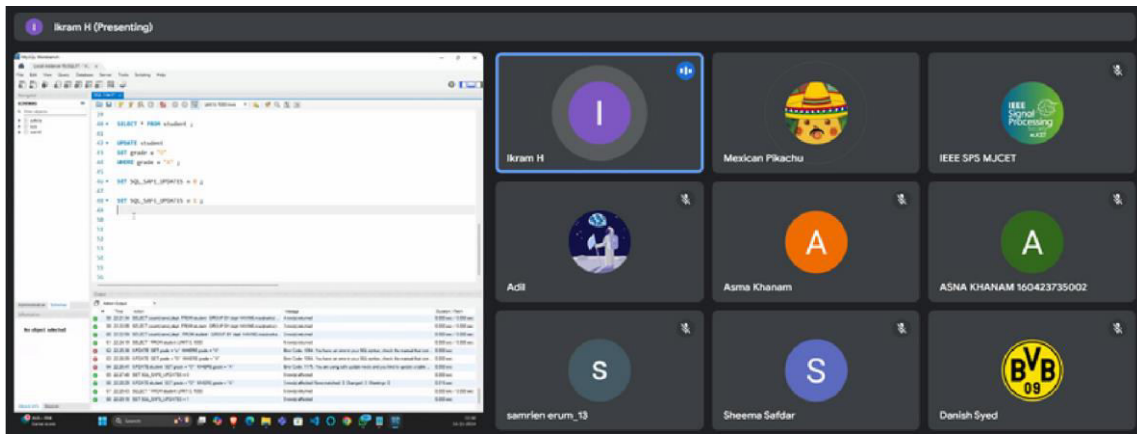# *SQL Student Development Program*

A student development program was conducted by the IEEE SPS MJCET student chapter's governing body.

The SDP took place from the 15th to the 17th of November online on Google meet.

The SDP intended to upskill the Execom and core members of the SPS chapter in MySQL .

The SDP also served the purpose of preparing the members of the SPS chapter for a planned IEEE SPS MJCET event

Over the course of 3 days, speakers: Ikram Hyderi, Samrien Erum and Adil spoke and gave presentations on various topics in MySQL.

Basic to intermediate concepts such as:

- Tables, Rows and Columns
- Data Types
- Primary Keys
- Foreign Keys
- SQL Queries were discussed

and presented

The SDP successfully prepared the IEEE SPS MJCET's Governing Body and Execom in MySQL by which the planned event can be safely conducted

SQL Verse - SQL Workshop

Date/Duration: 28th, 29th November / 2hrs per day

Organizers:

1. Asma Khanam (Chair, Signal Processing Society MJCET)
Email: 160421735007@mjcollege.ac.in **Contact:** +91 7981165219

2. Ikram Hyderi (Vice Chair, Signal Processing Society MJCET)
Email: 160421735022@mjcollege.ac.in
Contact: +91 6300247977

Target Audience: CSE, IT, AIML, AIDS and ECE
Number of Participants: 40 members
The IEEE SPS Chapter at MJCET organized a two-day SQL workshop, targeting

students from various technical disciplines.

Day 1 focused on foundational concepts such as database creation, table management, and basic SQL commands.

Speakers **Ikram**, **Samrien** and **Adil** gave presentations on the first day   VofCf othf eS PseSs, sIikornam **Hyderi** starting

On **Day 2**, Participants engaged in a hands-on project, applying advanced SQL techniques like joins, nested queries, and transaction management to build a functional database system. Day 2 was largely handled by speaker **Faariq**

Other than the speakers, the SPS team members were able to guide the participants wherever errors crept up.

The workshop offered a balanced mix of theoretical learning and practical application, equipping participants with essential database management skills

It reinforced IEEE's mission of fostering technical knowledge and professional growth, encouraging students to engage actively with real-world technology.

Visit to Agape children's orphanage

The members of the IEEE SPS Chapter at MJCET visited the Agape School and Orphan home, Sanskruti Township.

A fundraising campaign was run from the 10th of March to the 10th of April and the orphan home was visited on the 19th of April

The day was spent connecting, playing and sharing smiles with the HIV/AIDS affected children under their care.

The initiative was a small effort to show the children that they are not alone - that they are seen, heard and deeply cared for.

With the amount collected from the fundraiser, stationary and other essentials that the orphanage requested were bought.

The student chapter at IEEE SPS, MJCET focuses on both technological as well as humanitarian challenges and strives to set examples in both.

Python-IOT Workshop at Sultan-ul-Uloom Public School

Date/Duration: 3rd, 4th, 6th December / 2hrs per day **Host Organisation:** IEEE Signal Processing Society MJCET and IEEE Sensors MJCET

Organizers:

1. Asma Khanam (Chair, Signal Processing Society MJCET)
Email: 160421735007@mjcollege.ac.in
Contact: +91 7981165219

2. Ikram Hyderi (Vice Chair, Signal Processing Society MJCET)
Email: 160421735022@mjcollege.ac.in
Contact: +91 6300247977
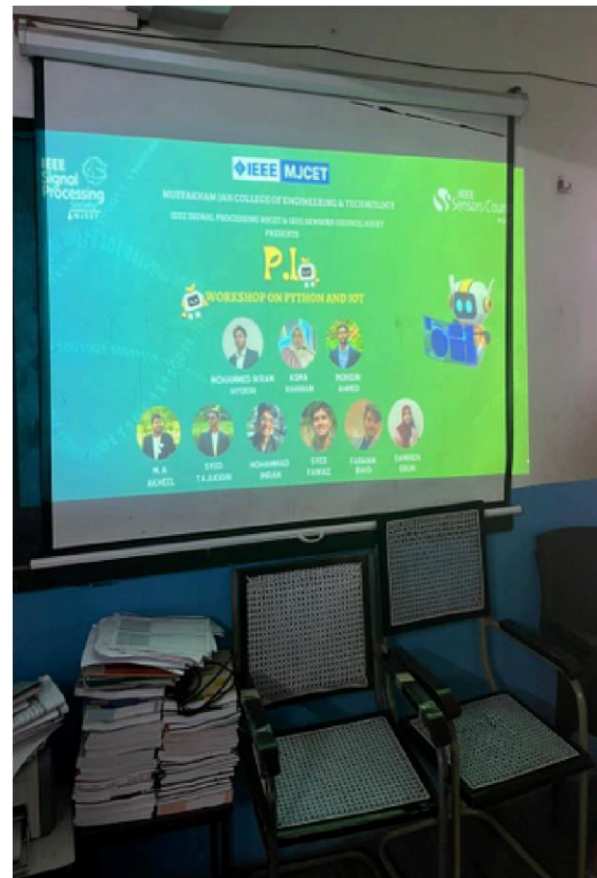
3. Mohsin Ahmed (Chair, Sensors)
Email: 160422735086@mjcollege.ac.in **Contact:** +91 9052517103

Target Audience: Students of grades 7, 8 and 9

Number of Participants: 45 members
The IEEE SPS Chapter organized a 3-day workshop at Sultan-ul-Uloom School for grade 7, 8 and 9 students, focusing on Python programming, Data Science, and IoT.

Day 1 & Day 2: Students were introduced to the basics of Python

programming, including variables, loops, and simple functions, along with an introduction to Data
Science concepts like data collection, analysis, and visualization

Day 3: The final day focused on the basics of IoT, where students participated in a hands-on project using LEDs and simple sensors to understand how devices can interact with each other through the internet.

The workshop aimed to provide students with a foundational understanding of these key technologies, sparking curiosity and encouraging them to explore the world of programming, data, and IoT.
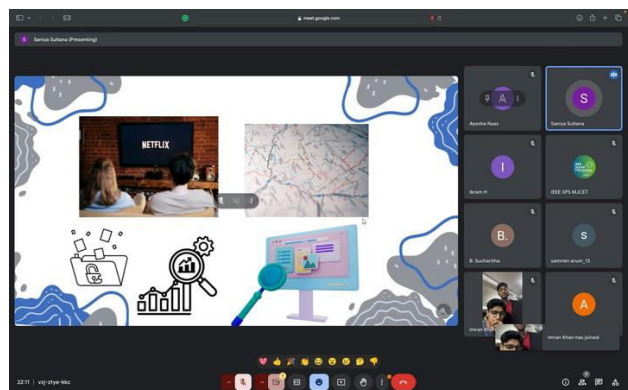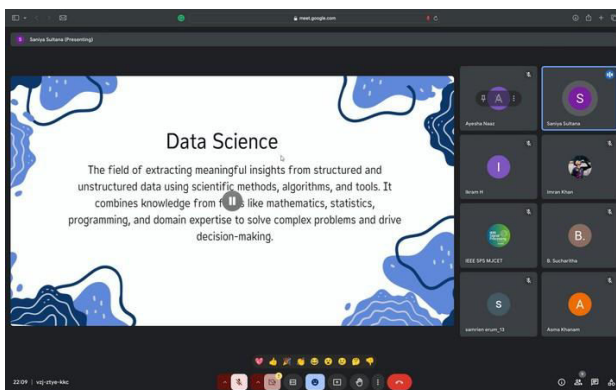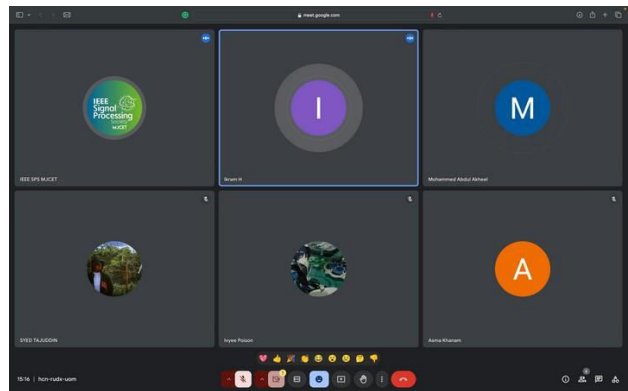
This initiative aligns with IEEE's mission to foster innovation and technological growth among young minds.

Report on SPS Team Meetings and Collaborative Activities

Over the past few months, the SPS (Signal Processing Society) student chapter at MJCET has actively conducted a series of regular online meetings to enhance team collaboration, promote knowledge sharing, and plan impactful initiatives. These sessions were held using Google Meet and included both core team members and student volunteers.

The meetings primarily focused on brainstorming and organizing events aligned with the goals of IEEE SPS, including workshops, webinars, technical talks, and hands-on learning sessions. In addition to planning, the meetings provided a platform to review past activities, gather feedback, and set clear responsibilities for each team member.

Key discussion points included:

- Coordination of events and outreach activities to increase student participation.
- Collaboration with other student branches to co-host technical sessions and interdisciplinary events.
- Technical presentations such as the one on Data Science, where members shared insights on tools, methodologies, and real-world applications of AI and analytics.
- Ongoing review of documentation and membership initiatives to ensure alignment with IEEE SPS global objectives.

The inclusive and interactive nature of these sessions encouraged active participation. Members used features like screen sharing to deliver content and visual aids effectively. Additionally, real-time reactions and feedback options were used to maintain engagement and promote a collaborative environment.

Through consistent communication and teamwork, the SPS chapter successfully fostered a culture of learning and innovation. These meetings continue to play a vital role in building leadership, technical expertise, and camaraderie among members.