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DEPARTMENTAL NEWSLETTER



A Half yearly in-house Newsletter

By

THE DEPARTMENT OF

Electronics and Communication Engineering

B.P. Poddar Institute of Management and Technology

Issue: MARCH EDITION



**EDITORIAL
BOARD**

Bapan Banik
(3rd Year)

Sakchham Kapoor
(2nd Year)

Archita Hazra
(2nd Year)



“

*He who can listen to the music
in the midst of noise
can achieve great things*

– Vikram Sarabhai



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B. P. Poddar Institute of Management & Technology Department of Electronics & Communication



Vision, Mission, PEO, PO, PSO

Vision of the Institute

To emerge as a progressive and premier institute for Engineering and Technology education with ethical values for creative engineering solutions with global changes.

Mission of the Institute

1. Offer quality education through a modern accessible, comprehensive and research oriented teaching-learning process.
2. Create opportunities for students and faculty members in acquiring knowledge through research and development.
3. Providing effective interface with industry by strengthening Industry- Institute interaction and developing entrepreneurial skills.
4. Meet ever-changing needs for the nation through rational evolution towards sustainable and environment friendly technologies.

Vision of the Department

To emerge as a premier department for studies in Electronics and Communication Engineering.

Mission of the Department

1. Imparting innovative educational program through laboratory and project-based teaching-learning process for meeting the growing challenges of industry and research.
2. Providing an inspiring and conducive learning environment to prepare skilled and competent engineers and entrepreneurs for sustainable development of the society.
3. Creating a knowledge centre of advance technologies committed to societal growth using environment-friendly technologies

Program Educational Objectives:

- PEO1:** Graduates of Electronics and Communication Engineering will be able to use latest tools and techniques to analyze, design and develop novel systems and products to solve real life problems.
- PEO2:** Graduates of Electronics and Communication Engineering will have strong domain knowledge, skills and attitude toward employment in core and allied industries, higher studies and research or will become successful entrepreneurs.
- PEO3:** Graduates of Electronics and Communication will exhibit ethical values, professionalism, leadership, communication and management skills, team work and multi-disciplinary approach to adapt current trends in technology through life-long learning.

Program Outcomes (POS)

1. Engineering knowledge	7. Environment and sustainability
2. Problem analysis:	8. Ethics
3. Design/development of solutions	9. Individual and team work
4. Conduct investigations of complex problems	10. Communication
5. Modern tool usage	11. Project management and finance
6. The engineer and society	12. Life-long learning

Program Specific Outcomes (PSO)

- PSO1:** Students will acquire knowledge in Advance Communication Engineering, Signal and Image Processing, Embedded and VLSI System Design.
- PSO2:** Students will qualify in various competitive examinations for successful employment, higher studies and research.

TECH TRENDS-*FUTURE IS NOW*

NEURA Robotics Gen 3 (Porsche Design) — By NEURA ROBOTICS

Release Date - January 5, 2026

Physical Specs

- Porsche-designed exterior — premium industrial aesthetic
- Gen 3 architecture — full redesign from previous generation
- Smaller companion model optimized specifically for fine dexterous manipulation
- Built on NVIDIA Jetson Thor (Blackwell architecture)

Vision & Intelligence

- Uses NVIDIA Isaac GR00T — simulated, trained, and validated behaviors before scaling to production
- Advanced manipulation AI for precision tasks
- Multi-sensor fusion: cameras, depth sensors, and force feedback

Deployment

- Industrial and consumer sector targets
- Production manufacturing partnership with NVIDIA ecosystem



Frequency Fun

The term "computer bug" originated from a literal moth trapped inside a Harvard Mark II computer in 1947.



Trust the Datasheet, Not Your Eyes: Identical-looking transistors often have different pinouts. Always verify which leg is the **Emitter, Base, or Collector** before soldering to avoid a "smoke test."

Asus ROG × Xreal R1 — By ASUS ROG + XREAL

Release Date: January 2026 (CES 2026) GAMING SMART GLASSES

The Asus ROG Xreal R1 stole the spotlight at CES 2026 with a 240Hz refresh rate — the highest of any smart glasses in the world — with a 171-inch virtual display, 1080p resolution with HDR, and a 57-degree field of view.

Display & Specs

- 240Hz refresh rate — world's first in smart glasses
- 171-inch virtual display at 1080p + HDR
- 57-degree field of view
- Connects to consoles, phones, and PCs
- Lightweight gaming form factor



Vision & Intelligence

- Screen pinning — virtual display stays stable as you move
- Low-latency rendering for competitive gaming
- Co-designed by Republic of Gamers (ROG) and Xreal for gaming performance

NVIDIA Jetson T4000 — By NVIDIA

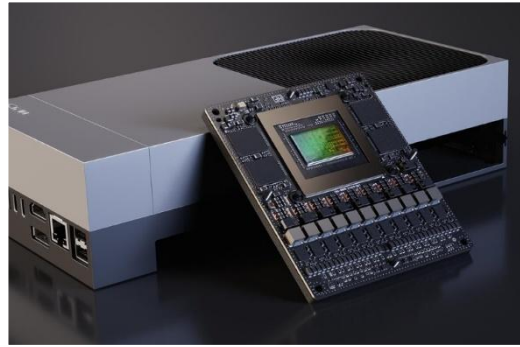
Release Date: January 5, 2026

Physical Specs

- AI Compute: **1,200 FP4 TFLOPS** — up to 4× better than the previous Jetson AGX Orin generation
- Memory: **64 GB** unified memory
- Power: Configurable between **40W and 70W** — optimized for tight thermal and power envelopes
- Process Node: **3nm** — built on NVIDIA Blackwell architecture
- Networking: **3× 25 GbE ports** for ingesting massive sensor data volumes at the edge
- Price: **\$1,999** at 1,000-unit volume

Processor & Accelerators

- CPU: **12-core Arm Neoverse-V3AE** for robust multi-threaded edge processing
- GPU: NVIDIA Blackwell architecture with **Transformer Engine** and **Multi-Instance GPU (MIG)** support
- Video Codec: **1× NVENC + 1× NVDEC** — enabling real-time **4K video encoding and decoding**
- Vision: Third-generation **Programmable Vision Accelerator (PVA)**, dual encoders/decoders, and **optical flow accelerator**



- Camera I/O: **16 lanes of MIPI CSI** — supports multiple simultaneous camera streams for robotics and inspection

Connectivity & I/O

- Interfaces: 5GbE port, four Gigabit Ethernet RJ45 PoE ports, DIO, RS232, RS485, CAN Bus, four USB 3.2 Gen 2, HDMI output
- Also supports: Wi-Fi 6, 5G, NVMe storage via M.2 slots, CAN-FD for robotics and vehicle control, TPM 2.0 security
- Pin-compatible with Jetson T5000 — developers can swap carrier boards between T4000 and T5000 without hardware redesign

Vision & Intelligence

- Supports Vision Language Action (VLA) models like **NVIDIA Isaac GR00T** for humanoids, as well as all popular LLMs and VLMs like **Cosmos Reason**
- JetPack 7.1 introduces **TensorRT Edge-LLM SDK** — an open-source C++ SDK for running LLMs and VLMs efficiently on edge platforms without data-center-scale compute
- Runs NVIDIA Isaac for robotics, NVIDIA Metropolis for visual agentic AI, and NVIDIA Holoscan for sensor processing — full cloud-to-edge AI software stack
- Delivers up to **4.5× higher throughput** on Vision Language Action (VLA) models vs. previous generation

Software & OS

- JetPack 7.1 — production release with Jetson Linux 38.4
- Linux Kernel 6.8 + Ubuntu 24.04 LTS base
- Supports CUDA, TensorRT, PyTorch, Isaac ROS, ROS2
- Aligns with ARM Server Base System Architecture (SBSA) for industry-standard compatibility

RECENT EVENTS

Workshop on C Programming by SPIE

The *Workshop on C Programming* was conducted from **3rd to 7th January 2026** by the ECE Department in association with SPIE Student Chapter, BPPIMT. It aimed to strengthen programming fundamentals, logical thinking, and problem-solving skills.

The workshop was held in a **hybrid mode (online + offline)** and covered key topics like C basics, arrays, functions, recursion, pointers, memory management, data structures, and algorithms. It also included sorting techniques and advanced concepts.

Each day focused on different topics, along with **interactive sessions, a quiz, and hands-on practice**.

The offline session provided practical exposure and doubt clearing.

Overall, the workshop was successfully completed, helping participants build a **strong foundation in C programming and data structures**.



Lab Visit to 5G Use Case Lab, IIIT Kalyani by SPIE



The lab visit to the **5G Use Case Lab at IIIT Kalyani** on **21st January 2026** was organized to provide practical exposure to 5G technology. A total of 26 students, along with faculty members, participated.

The visit focused on understanding 5G architecture, signal processing, and real-world applications. Students explored key components like 5G core servers, MEC servers, and radio units, and attended practical sessions on modulation, OFDM, MIMO, and beamforming.

Advanced instruments such as signal analyzers and software tools were demonstrated for real-time signal analysis. Live use cases included smart homes, AI-based drones, IoT agriculture, and AR/VR applications.

Overall, the visit was highly informative, enhancing students' knowledge of modern wireless communication and bridging the gap between theory and practical implementation.

SOCIAL AWARENESS PROGRAM by SPIE

The Social Awareness Programme was conducted on **8th–9th February 2026** at **Sagardwip, Sundarbans** by the SPIE Student Chapter of BPPIMT. The aim was to understand socio-economic and educational challenges in remote areas.

Students and faculty visited a local school and interacted with teachers and villagers, identifying major issues like **irregular electricity, poor infrastructure, and limited resources**, which affect education.

To address this, the team distributed **solar panels and batteries**, promoting sustainable energy solutions and improving learning conditions.

Overall, the program was impactful, creating awareness, supporting the community, and encouraging **social responsibility and sustainable development**.



ACHIVEMENTS & AWARDS- YOU MAKE US PROUD

Technical & Innovation Events

- Aadipto Ghosh, Rishita Saha, Gourab Dey, Aniket Chakraborty, Sris Upam Sarkar, Arnab Ganguly, Abhik Sarak– 2nd Prize in Passion With Reels Techstorm 2.26, organized by BPPIMT
- Shinjini Biswas – 2nd Prize in Creative Canvas Techstorm 2.26, organized by BPPIMT

Literary & Cultural Competitions

- Soumili Saha – 2nd Prize in Debate Contest, organized by Vaani (Orator's Forum), BPPIMT
- Ankan Barik – 3rd Prize in Debate, organized by organized by Vaani (Orator's Forum), BPPIMT

Academic Achievements

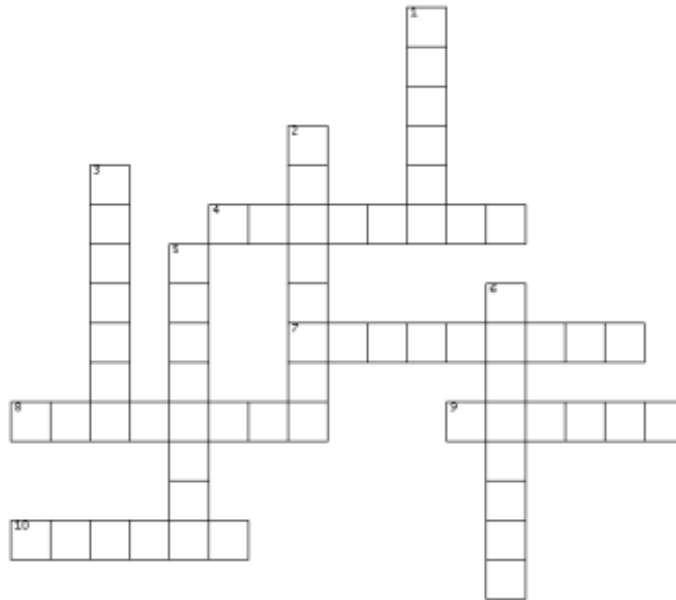
- Srijita Dutta and Disha Saha – 1st Prize in Report Writing Competition, organized by SPIE Student Chapter
- Oindrilla Mishra and Annesha Sanyasi – 2nd Prize in Report Writing Competition, organized by SPIE Student Chapter
- Archita Hazra – 3rd Prize in Report Writing Competition, organized by SPIE Student Chapter
- Anuska Saha – Research Paper Publication, organized by International Journal of Advanced Research Publications

Robotics Competition Achievements

- Team Ares
 - 1st position in Death Race at IEST Shibpur
 - 2nd position in Robo Soccer at Ceramic College
 - 2nd position in Death Race
 - 1st & 3rd positions in Race at Heritage Institute
 - 1st position in Sumo
 - 1st & 2nd positions in Soccer at GNIT
 - 2nd position in Race
 - 1st & 2nd positions in Sumo at Jadavpur University
 - 2nd position in Race
 - 1st & 2nd positions in Soccer
 - 1st position in Line Following Robot (LFR)
 - 1st & 2nd positions in Robo Soccer at Techno Main
 - 1st position in Race at Vivarta
 - 1st & 2nd positions in Soccer at Vivarta
 - 1st position in Soccer at Netaji
 - 2nd & 3rd positions in Race
- Urba Das, Aman Jha, Ushree Ghosh – 2nd Prize in Line Following Robot, organized by Adamas University Tech Fest

Brain-Break

CROSSWORD PUZZLE



ACROSS

- 4. - A global network connecting computers
- 7. - Step-by-step procedure to solve a problem
- 8. - Physical parts of a computer
- 9. - A computer that provides services to other computers
- 10. - A device that routes internet data

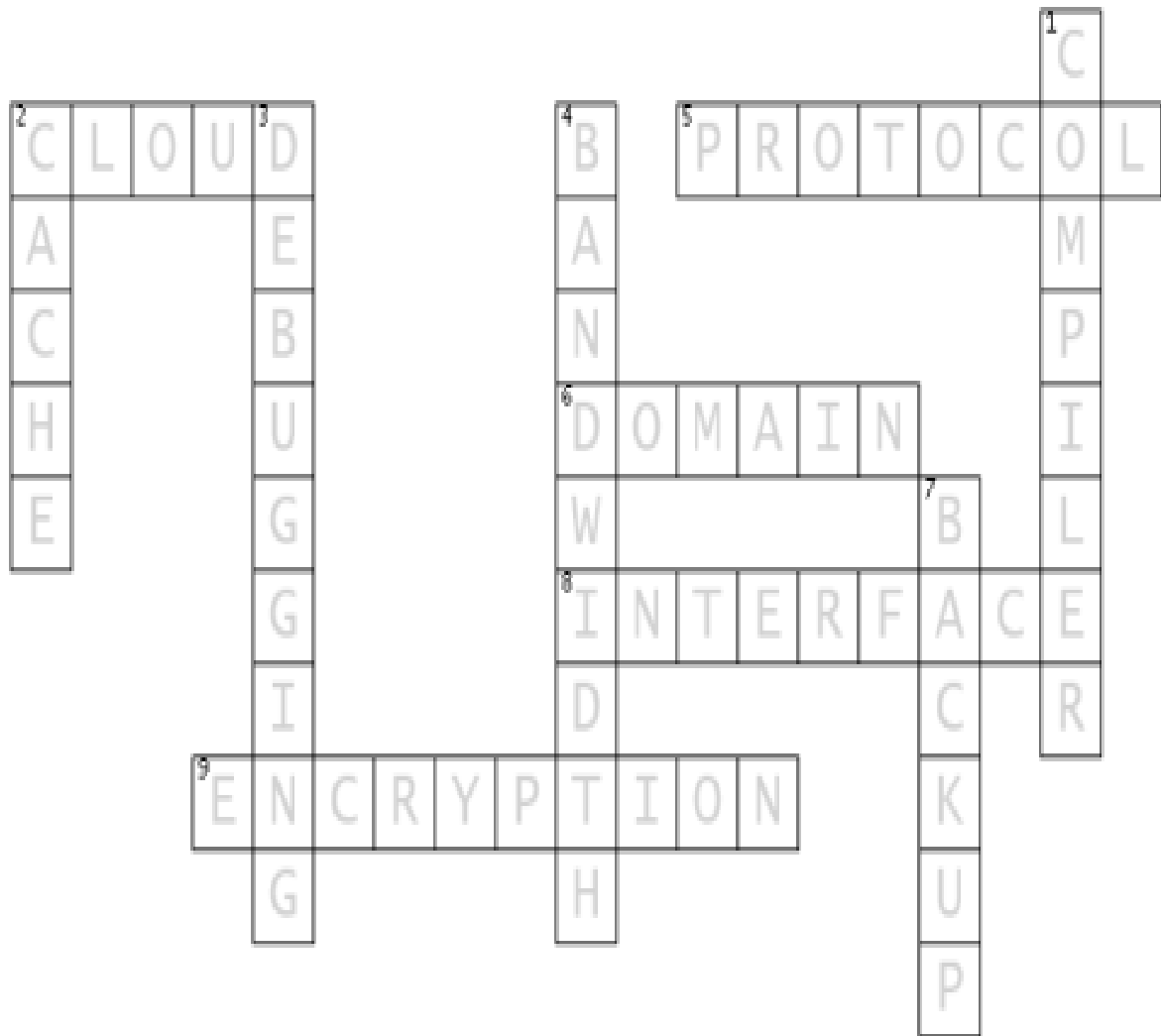
DOWN

- 1. - A popular programming language known for simplicity
- 2. - A collection of organized data
- 3. - Software used to browse the internet
- 5. - Programs and applications in a computer
- 6. - Protects a network from unauthorized access

Tech Tips

Master the "Text Replacement" Shortcut: Save time by setting up shortcuts for things you type often. (e.g., set @@ to auto-fill your entire email address).

ANSWER TO OCTOBER 2025-2026



WELLS

“The important thing is to be a man of the world. That's what I have tried to be, and to a small extent, succeeded. But I like to do things for people.” —**Dr. Narinder Singh Kapany**

Dr. Narinder Singh Kapany (1926–2020)



Narinder Singh Kapany was an Indian-American physicist and engineer who laid the foundation of modern optical communication. He proved that light can be efficiently transmitted through thin glass fibers, enabling high-speed data transfer over long distances. He Created Fiber Optics (1950s), Introduced light-based communication systems, Laid groundwork for optical communication, high-speed internet, telecommunications, medical imaging, and global networking.

EDITORIAL BOARD

Faculty

- Dr. Ivy Majumdar
- Ms. Rashmita Mishra
- Dr. Vedatrayee Chakroborty

ECE isn't just a department — it's a vibe. Keep exploring. Keep creating. Keep shining