Jio Institute
LEARNING FOR LIFE

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Special Edition

SUMMER PROGRAMME

TECH TREK 2.0

JUNE 23 - JUNE 27, 2025

EXECUTIVE SUMMARY

Bridging Tomorrow: Tech Trek 2.0's Journey from Data-Driven Learning to AI-Powered Innovation

Tech Trek 2.0, Jio Institute's **AI and data science residential summer programme,** successfully concluded its second edition from **June 23-27, 2025.** The **five-day** intensive programme brought together **30** participants from **25** premier educational institutions across **10** Indian states. Under the leadership of Dr. Shailesh Kumar, Dean and Chief Data Scientist at Jio Platforms, the programme delivered a comprehensive curriculum covering AI fundamentals, industry exposure, and practical application through hackathon challenges. The programme successfully achieved its mission of developing technology creators rather than mere consumers, culminating in innovative healthcare-focused solutions that demonstrated participants' ability to translate **theoretical knowledge** into **market-ready innovations.**

INTRODUCTION AND COHORT PROFILE

Tech Trek 2.0 brought participants from **diverse educational and professional** backgrounds spanning 10 Indian states. The cohort included students from prestigious institutions such as **IIT Madras, Dhirubhai Ambani Institute of Information and Communications Technology (DA-IICT), MIT Manipal,** and **VIT,** alongside professionals from industry leaders including **RIL** and **Nielsen Media.** This unique blend of academic talent from diverse backgrounds created an environment where theoretical knowledge met practical application, promoting meaningful exchanges that enriched the learning experience and drove innovative collaboration throughout the programme.

INAUGURAL SESSION

The programme commenced with a strategic foundation session led by **Dr. Shailesh Kumar,** Dean of Jio Institute and Chief Data Scientist at Jio Platforms, who guided participants through the paradigmatic shift from traditional data processing to AI-powered systems. **Dr. Palak Sheth,** Project Director, emphasized the programme's core mission of developing technology creators rather than mere consumers. The inaugural session established the framework for understanding how organizations can leverage AI to drive innovation and efficiency, setting the stage for an intensive learning journey that would seamlessly blend academic rigor with practical application.

Breaking the Ice,
building the vibe

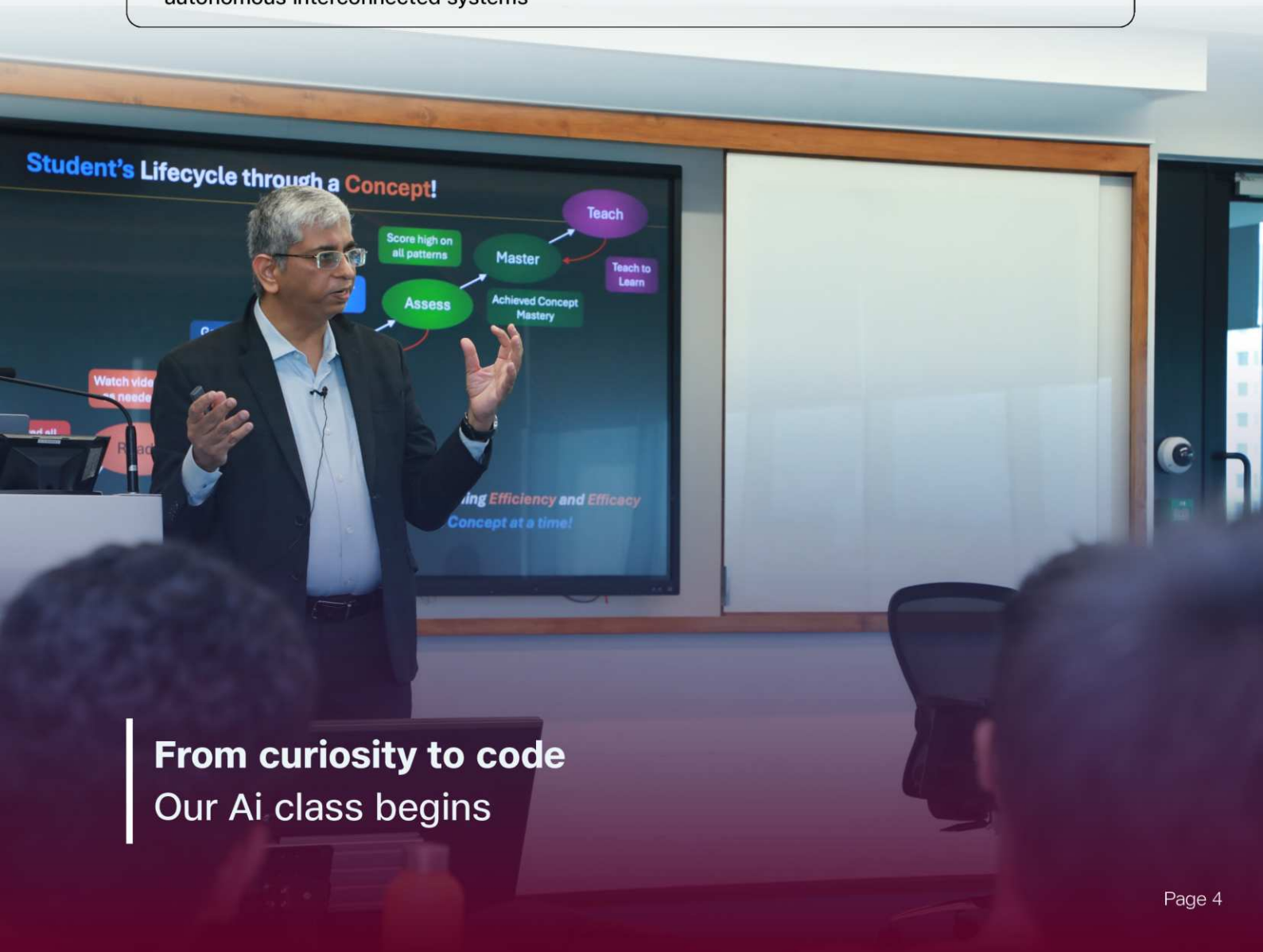
ACADEMIC EXCELLENCE: **BUILDING FOUNDATIONS FOR AI LEADERSHIP**

Data First to AI-First Evolution

Dr. Shailesh Kumar guided participants through the strategic transition from data-rich organizations to truly AI-first enterprises. The session explored AI as an extension of human intelligence and demonstrated how two decades of data accumulation across industries can now be leveraged to move beyond simple analytics into creating intelligent systems that drive long-term strategic decisions.

Key Takeaways:

- AI represents a fundamental shift from **data processing** to **intelligent system** creation
- Organizations must transition from being **"data-rich"** to truly **"AI-first"** in their approach
- Success requires building integrated, **AI-driven ecosystems** rather than isolated solutions
- Business decisions must transform from broadcast to personalized and batch to real-time processing
- The evolution spans three generations: **programmed intelligence, crowd-powered intelligence, and autonomous interconnected systems**



From curiosity to code
Our Ai class begins

DATA STORYTELLING MASTERY

Mr. Raghav Shyam, Co-founder of Wilson Consulting, demonstrated the critical art of transforming complex analytics into compelling narratives. The session addressed the essential skill of communicating insights effectively to drive organizational change, breaking down data storytelling into three core components: data, visual representations, and overarching narrative structures.

Key Takeaways:

- Raw data and visualizations alone are insufficient without compelling **narrative structure**
- Effective data storytelling requires **integration** of data, visuals, and narrative components
- The **three-act model** provides framework: setup, confrontation, and resolution with actionable insights
- Visual selection must **strategically support** and enhance the story being communicated
- Creating **emotional connections** with data is essential for driving organizational action and change

Mr. Raghav Shyam
Co-founder of Wilson Consulting

Learning is brighter
when smiles lead the way

AI FUNDAMENTALS AND ETHICS

Dr. Mohamad Nassar from New Heavens University provided comprehensive coverage of AI building blocks while emphasizing crucial ethical considerations. His expertise in explainable AI brought particular depth to discussions about creating trustworthy, transparent systems capable of articulating their decision-making processes for sensitive applications.

Key Takeaways:

- AI encompasses multiple subfields including **machine learning**, natural language processing, and **robotic process automation**
- Everyday applications like Netflix recommendations and banking fraud detection demonstrate
- Explainable AI (XAI) is **practical AI impact** crucial for **sensitive domains** including medicine, finance, and critical infrastructure
- Trustworthy AI systems must **balance power with transparency** in decision-making processes
- Ethical considerations must be integrated throughout the entire **AI development lifecycle**

Dr. Mohamad Nassar,
Assistant Professor, New Heavens University

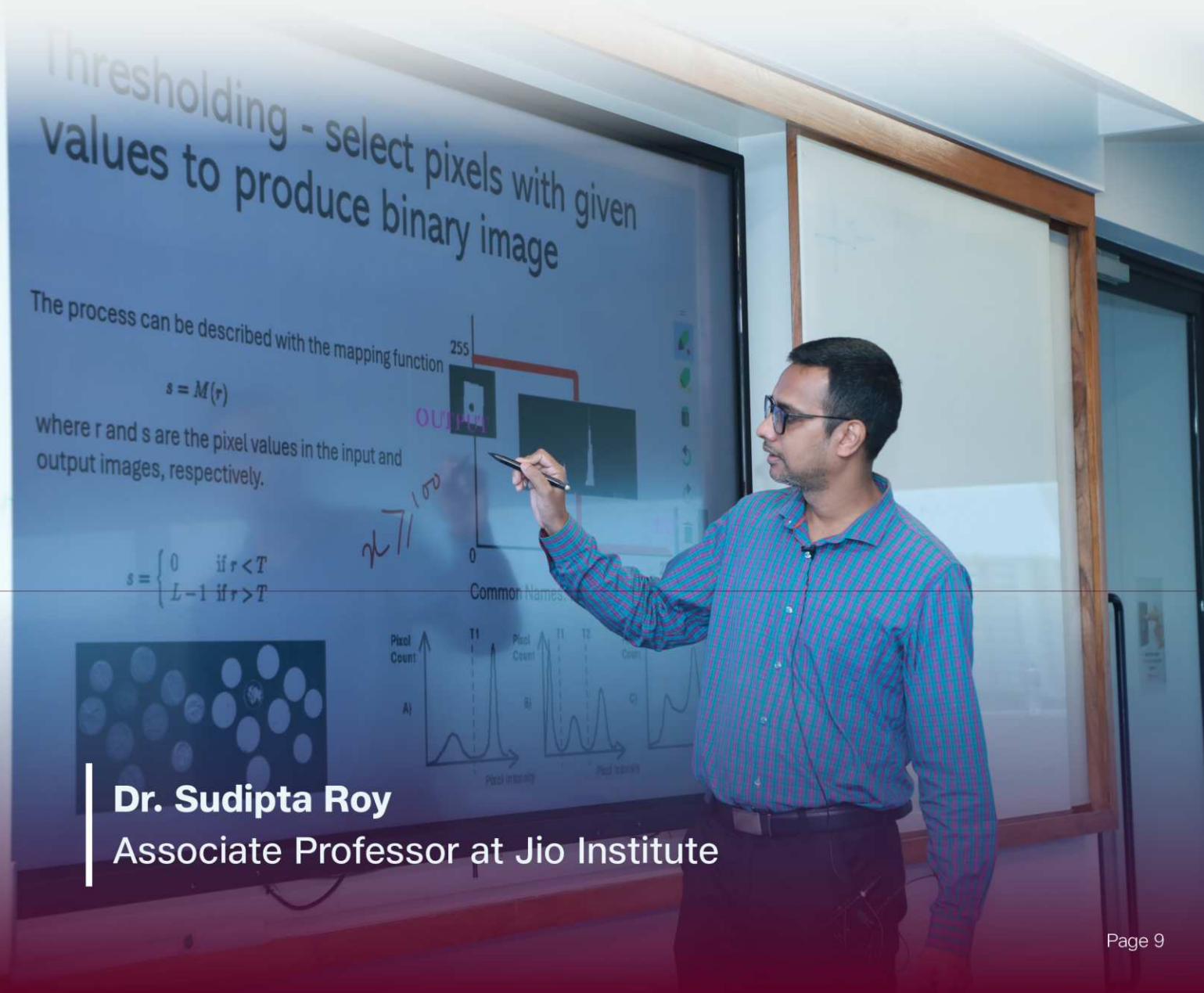
Eyes on the lesson
mind on the future

COMPUTER VISION AND DEEP LEARNING

Dr. Sudipta Roy, Associate Professor at Jio Institute, delivered advanced sessions on machine learning techniques for visual information interpretation. His research background in computer vision and biomedical image analysis provided insights into cutting-edge applications across medical imaging, e-commerce, and retail sectors, demonstrating the versatility of computer vision technologies.

Key Takeaways:

- Computer vision enables machines to interpret and understand **visual information** like humans
- Convolutional Neural Networks (CNNs) serve as the foundation for **modern computer vision** success
- Applications span from **medical disease detection** to **e-commerce visual** search and virtual try-on
- **Deep learning** revolutionized the field by enabling automatic feature detection and learning
- Real-world implementation requires understanding **both theoretical concepts** and practical deployment challenges



Dr. Sudipta Roy
Associate Professor at Jio Institute

AI PRODUCT LIFECYCLE MANAGEMENT

Dr. Vishnu Prasad, Assistant Professor and **Dr. Kalyan Tadepalli,** AI & Healthcare Consultant led comprehensive workshops on bringing AI solutions from concept to market. Their expertise in AI-native businesses provided practical insights into commercialization challenges, covering the complete journey from ideation through deployment, monitoring, and establishing continuous improvement feedback loops.

Key Takeaways:

- **AI product** success extends beyond algorithm development to encompass the entire product lifecycle
- Strategic product thinking must guide **AI solution** development from initial ideation to market deployment
- Data-centric phases including **acquisition, preprocessing,** and feature engineering are critical success factors
- Deployment and monitoring require ongoing attention to address challenges like **model drift** and **performance degradation**
- Establishing feedback loops enables **continuous improvement** and ensures long-term product viability and success

Dr. Vishnu Prasad,
Assistant Professor

Penning down ideas

VIBE CODING FUNDAMENTALS

Dr. Vishnu Prasad and Dr. Kalyan delivered a foundational bootcamp on modern coding practices, emphasizing AI-assisted development workflows. The "Vibe Coding" approach treated Large Language Models as pair programming partners, where developers guide AI tools to generate and refine code efficiently while maintaining high standards for clean, maintainable code.

Key Takeaways:

- Modern coding integrates AI assistance as an **intelligent pair programming partner**
- Developer roles evolve from writing every line to **guiding AI systems** and refining generated output
- Version **control systems** and **collaborative platforms** are essential tools for professional development workflows
- Clean, maintainable, and reproducible code is **particularly critical for AI** and data science projects
- Hands-on practice and iterative learning foster both **technical proficiency** and **creative problem-solving capabilities**

Dr. Kalyan Tadepalli
Student Mentor, AI & DS, Jio Institute

RELIANCE CORPORATE PARK (RCP) EXPERIENCE

The visit to **Reliance Corporate Park** provided participants with comprehensive insights into large-scale technology operations at one of India's most technologically advanced conglomerates. The focused exploration of the **5G Innovation Center, Telecom OS laboratory, and Oil & Gas Simulation units** demonstrated how advanced technologies including **AI, digital twins,** and next-generation telecommunications infrastructure operate at national scale. Participants gained firsthand experience of how massive enterprises centralize functions while pioneering technological frontiers, observing the practical implementation of strategies and technologies discussed throughout the programme and understanding the complexity required for systems serving hundreds of millions of users.

FYND INDUSTRY ENGAGEMENT

The visit to **FYND** offered insights into AI's transformative role in retail and product development within a dynamic startup ecosystem. This experience showcased practical applications of computer vision technologies including **visual search capabilities, automated product tagging, and virtual try-on** technologies in e-commerce environments. The startup environment provided contrast to the large enterprise experience at RCP, illustrating different approaches to innovation, product development, and technology deployment while demonstrating how AI transforms customer experiences and optimizes business operations through machine learning algorithms for inventory management and personalization systems.

Exploring the future of connectivity
at the Jio 5g centre

Exploring innovation
at FYND

HACKATHON CHALLENGE: **INNOVATION IN ACTION**

The hackathon challenge served as the programme's culminating event, providing participants with an intensive opportunity to synthesize their learning into real-world solutions. Teams embraced collaboration and creativity to address pressing **healthcare challenges,** with each team developing **working MVPs** that demonstrated underlying architectural infrastructure and proof-of-concept capabilities.

EDGE-RESILIENT FRAUD-DETECTION ALGORITHM

This innovative solution addressed healthcare fraud through lightweight analytics deployed at the network edge, **combining real-time anomaly detection with predictive modelling** to identify suspicious insurance claim patterns. The edge-computing approach demonstrated advanced understanding of distributed systems, processing claims data in real-time to flag fraud indicators and alert administrators before fraudulent payouts occur. The system's machine learning algorithms analyze multiple data sources to identify subtle fraud patterns that escape traditional rule-based systems, addressing a critical problem that costs healthcare systems billions annually while affecting accessibility and quality of care.

MULTILINGUAL APPOINTMENT-BOOKING IVR WITH TRIAGE

This comprehensive solution tackled **healthcare accessibility** through an interactive voice response system enabling appointment booking in multiple local languages with **intelligent triage capabilities**. The system automatically routes callers to appropriate specialists based on questionnaire responses, performing effective first-level medical assessment while addressing India's linguistic diversity. The multilingual **voice recognition** and automated triage functionality demonstrate sophisticated natural language processing implementation, potentially reducing wait times, improving resource allocation, and ensuring **patients receive appropriate care** more efficiently through AI-powered healthcare workflow integration.

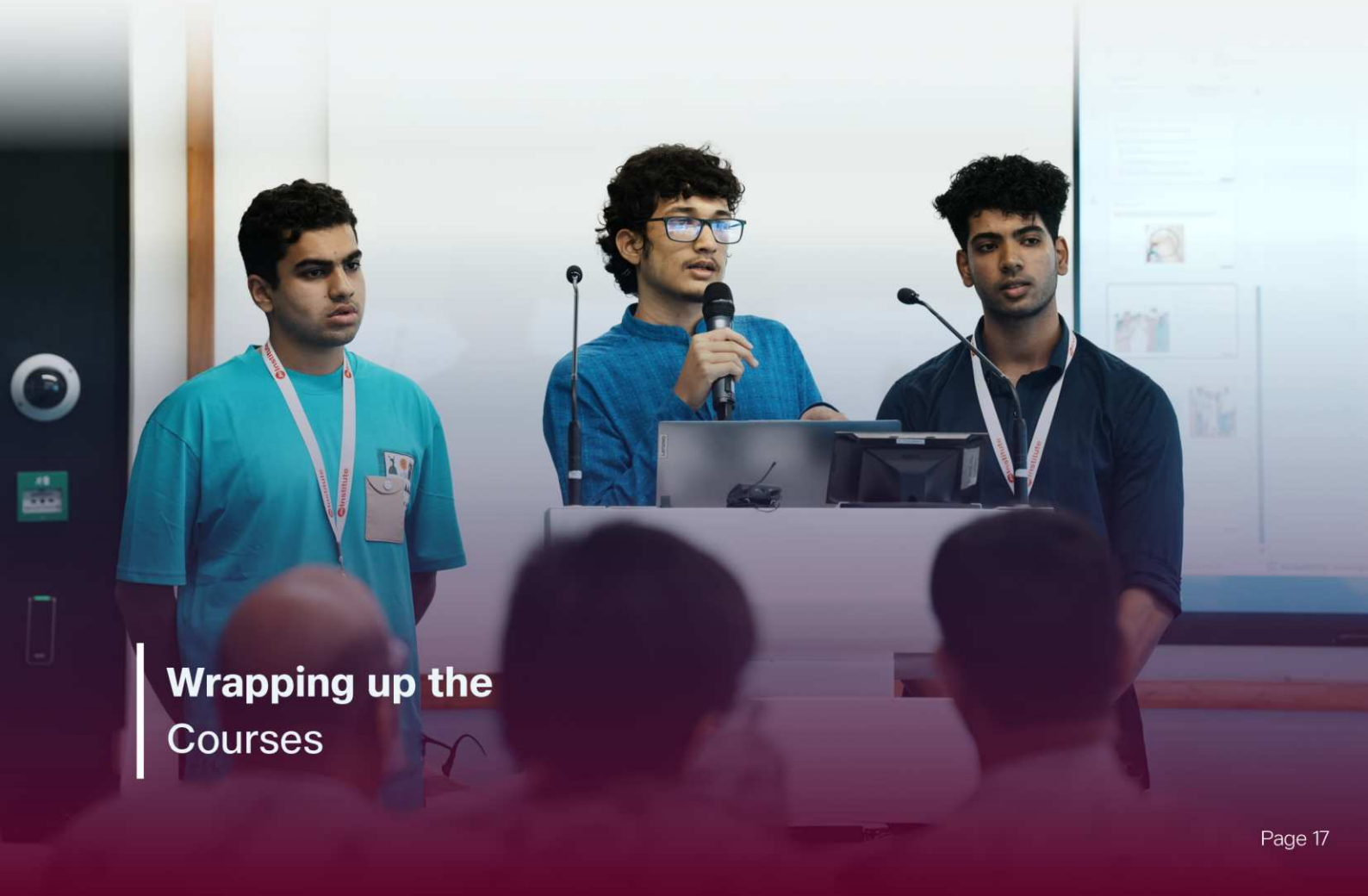
From Learners to
Presenters

WOMEN'S REPRODUCTIVE-HEALTH MANAGEMENT APP

Designed specifically for individuals with **polycystic ovary syndrome (PCOS),** this mobile application provides comprehensive health management through symptom tracking, medication scheduling, and lifestyle metrics monitoring with personalized advice delivery. The app connects users with nearby specialist clinics, addressing significant gaps in women's healthcare technology through sophisticated data integration and analysis of multiple health metrics. The clinic connection feature integrates location-based services with healthcare provider databases, creating a holistic ecosystem that supports both **individual health management** and **healthcare system navigation** while demonstrating mature understanding of healthcare privacy and regulatory requirements.

NEURODIVERGENT-CHILD SUPPORT PORTAL

This innovative platform addresses unique needs of **neurodivergent children** through comprehensive personal management combining daily routine tools with aggregated **pediatric healthcare service** directories. Caregivers can monitor progress, schedule therapies, and receive personalized service recommendations, creating a centralized support ecosystem that demonstrates deep understanding of inclusive design principles. The solution showcases empathy-driven development and commitment to social impact, featuring sophisticated data integration and matching algorithms that help caregivers navigate complex healthcare landscapes while providing **valuable tools for tracking developmental milestones** and therapy effectiveness over time.



Wrapping up the Courses

GOVERNMENT-SCHEME LOCATOR WITH NATIONAL HEALTH STACK INTEGRATION

This sophisticated solution helps patients identify eligible government health insurance schemes at point of care through integration with **India's National Health Stack**, automating enrollment and payment-processing workflows upon scheme selection. The system addresses significant barriers to healthcare access and insurance utilization, demonstrating advanced understanding of government technology infrastructure and complex regulatory requirements.

The **automated enrollment** and **payment processing functionality** addresses critical pain points in healthcare access, particularly for underserved populations struggling with bureaucratic processes, while showcasing mature product development capabilities with significant potential for improving healthcare equity and accessibility across India's diverse population.

Big ideas,
Bold innovations

CONCLUSION AND IMPACT

Tech Trek 2.0 successfully achieved its mission of developing the next generation of technology leaders through a comprehensive approach combining world-class education, hands-on experience, and industry exposure. The programme created a unique ecosystem where theoretical knowledge transformed into practical innovation, evidenced by the remarkable quality and diversity of hackathon solutions addressing **real-world healthcare challenges.**

The programme's impact extended beyond technical skill development to encompass critical thinking, creative problem-solving, and entrepreneurial mindset development. Participants gained exposure to industry best practices, developed professional networks, and acquired deeper understanding of AI's societal implications and ethical considerations, preparing them for leadership roles in an AI-driven future.

As one participant reflected during the closing circle: ***"It wasn't just about learning code. It was about learning to think, to question, and to create."*** This sentiment captures the programme's essence and its success in developing fundamental capabilities essential for tomorrow's technology leaders, reinforcing Jio Institute's commitment to nurturing innovation and excellence in technology education.

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Courses

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