







AI NEXUS ACCELERATOR TRAINING & INTERNSHIP

Nurturing Future Talent in AI, Research, and
Innovation

For FSC /O-Level & A-Level Students

AI NEXUS ACCELERATOR SUMMER 20256

-  **Location:** Classrooms at National Centre of Artificial Intelligence (NCAI), NUST
-  **Timings:** 10:00 AM – 12:00 PM (Monday–Friday)
-  **Audience:** Intermediate Students (FSc / O & A-Level, Ages 16–19)
-  **Outcome:** Certified Internship + AI Project Showcase + Career Exposure

PROGRAM ROADMAP : FROM CURIOSITY TO CAPABILITY

WEEK	Module Title	Theme	Objective
1	Foundation & Skills	How machines think and respond	Understand the basics of AI, electronics, and programming to build smart systems
2	Intelligence to Innovation	From data to decision-making	Explore AI domains and design a practical solution using creative thinking
3	Capstone Internship & Demo	Build. Test. Present.	Work as an AI team to build a prototype and present it to expert mentors



WEEK 1

FOUNDATION & SKILLS

Theme: How machines think and respond

Objective: Understand the basics of AI, electronics, and programming to build smart systems

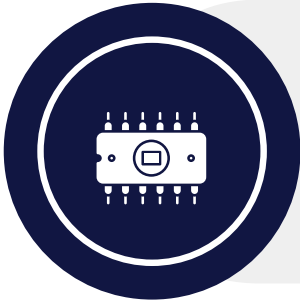
This week sets the foundation – introducing students to what AI is, how electronics interact with code, and how machines can make decisions.



DAY 1 – Orientation & AI in the Real World

- Opening Ceremony & Welcome Session
- Keynote Lecture: "AI on the Leading Edge" by Prof. Dr. Yasar Ayaz
- Icebreaker + Discussion: "Where is AI in our lives?"

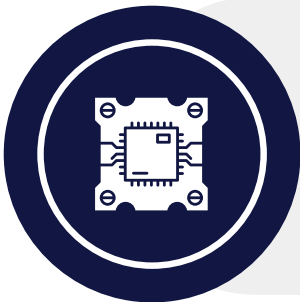
Outcome: Launch of AI learning sessions, inspire students to think critically about intelligence in machines



Day 2 – Electronics & Microcontrollers

- What is a microcontroller? Introduction to Arduino
- Explore hardware: LEDs, Resistors, Pins
- Build your first circuit – no programming yet

Outcome: Begin hands-on R&D with electronics



Day 3 – Simulate & Program Hardware

- TinkerCAD Simulation – overview
- Simulate LED + Switch circuit
- Install Arduino IDE + Blink program

Outcome: First programming practice – understand hardware–software interface



Day 4 – Python Programming Essentials

- Python IDE Setup
- Learn If-Else, Loops, Inputs
- Mini Project – Number Guessing or Calculator App

Outcome: Logical thinking and foundational programming fluency



Day 5 – Robotics & Machine Learning Basics

- What is a robot? Sensors, motors, decisions
- Machine Learning 101 – models and predictions
- Real-world examples: Smart homes, self-driving cars

Outcome: Understand how code and data drive intelligent machines

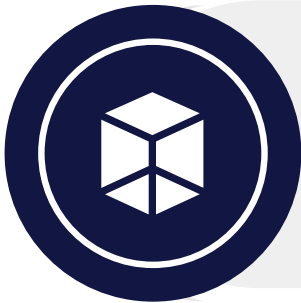
WEEK 2

INTELLIGENCE TO INNOVATION

Theme: From data to decision-making

Objective: Explore AI domains and design a practical solution using creative thinking

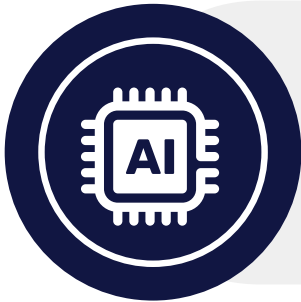
This week deepens the exploration into how data powers AI and how students can creatively apply AI principles to address real-world challenges.



Day 6 – 3D Design & Prototyping

- Intro to CAD & 3D Modelling
- Design a robot frame (STEM-based structure)
- Team activity: Customize design + Export STL

Outcome: Develop product design and spatial thinking skills



Day 7 – AI's Fuel: Data

- Where AI gets data: sources & quality
- Visualize trends with graphs and stats
- Learn how to measure model performance

Outcome: Introduce data handling for AI learning



Day 8 – Deep Learning, NLP & Vision

- Neural networks explained simply
- Computer Vision & NLP use cases
- Interactive demos: Chatbots, PoseNet, Teachable Machine

Outcome: Gain exposure to advanced AI domains



Day 9 – Design Thinking Workshop

- What is Design Thinking? Steps & Mindsets
- Ideate in groups: "AI for Society" challenge
- Storyboarding + define user, problem, solution

Outcome: Start designing your team's AI solution



Day 10 – Project Planning & Research

- Finalize teams + themes
- Online research + benchmarking
- Set roles, timelines, tools, and outcomes

Outcome Ready for team-based project execution (internship phase)

WEEK 3

CAPSTONE INTERNSHIP & DEMO

Theme: Build. Test. Present.

Objective: Work as an AI team to build a prototype and present to expert mentors

This final phase simulates an internship where students apply their learning to build, refine, and showcase an intelligent system.



Day 11 – Hardware Integration & Setup

- Connect sensors, motors, LEDs
- Begin coding & linking inputs
- Begin component testing

Outcome: Intern-style experience begins with real build tasks



Day 12 – AI Integration

- Choose and connect AI tools (Teachable Machine, APIs, logic)
- Link ML output to hardware or dashboard

Document early progress

Outcome: Final step in building a real AI solution



Day 13 – Final Testing & Feedback

- Refine logic, optimize flow
- Troubleshoot and enhance performance
- Internal peer review



Day 14 – Polish & Rehearse

- Prepare presentation slides, posters, and scripts
- Mentor practice round + feedback
- Final tweaks and refinements



Day 15 – Final Showcase & Certificates

- Live Demos + Jury Panel Review
- Certificate Ceremony + Group Photo
- Campus Visits (Experience Center, NSTP, SINES, RISE)

Outcome: Build confidence, celebrate completion, and receive Internship Certificate

PROGRAM COMPLETION OUTCOMES

Each participant will:





AI NEXUS ACCELERATOR TRAINING & INTERNSHIP

Nurturing Future Talent in AI, Research, and Innovation



+92 51 90856953

+92 51 90856954



training@ai-hive.org