



AI RESEARCH APPRENTICESHIP PROGRAM

A 2-Week Intensive Research & Innovation Experience



**AI RESEARCH
APPRENTICESHIP**

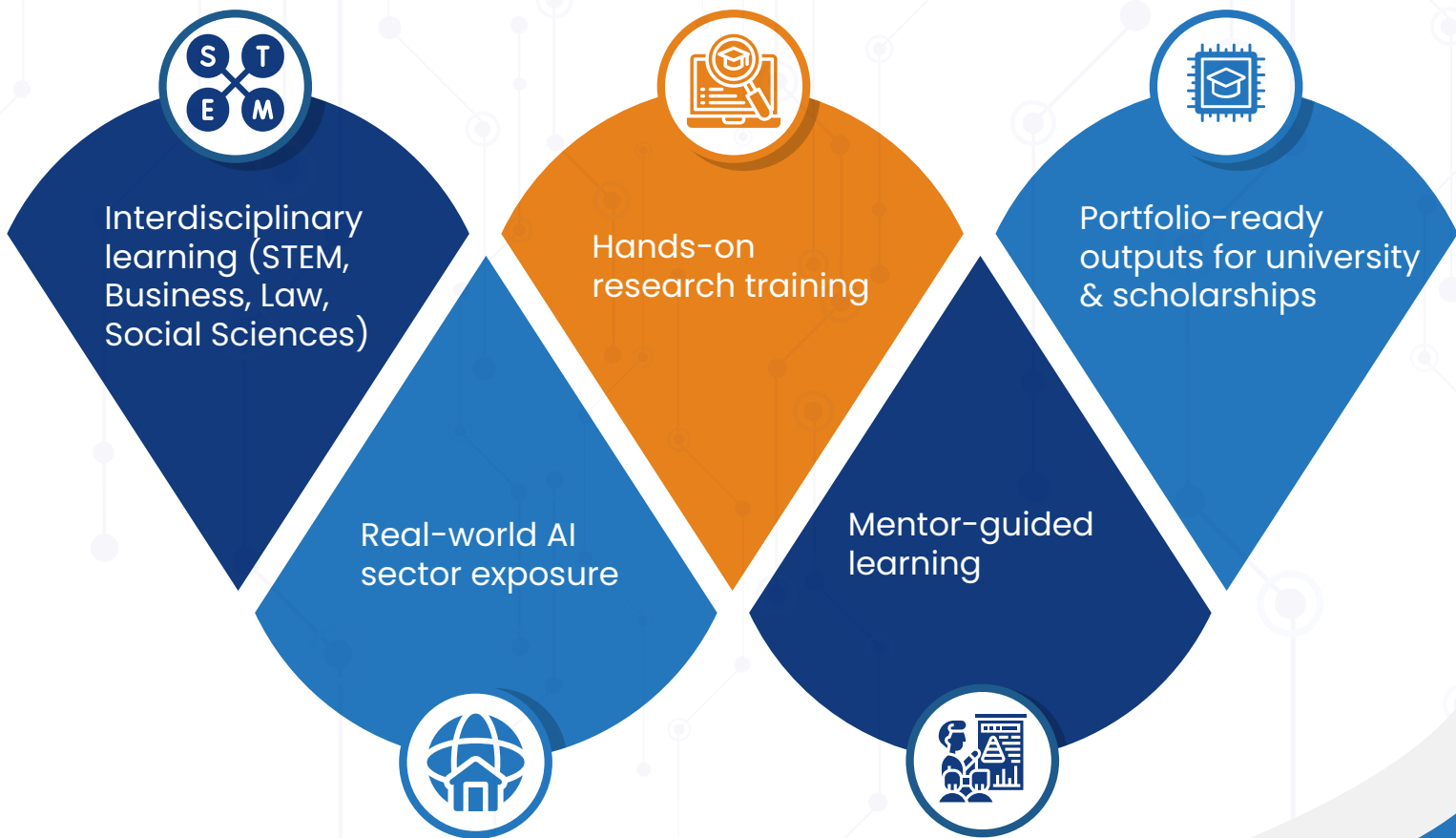
Learn to Research. Research to Lead.

Program Overview

The AI Research Apprenticeship Program is a two-week immersive experience where students learn to conduct AI-driven sectoral research, develop strategies, and produce actionable outputs.

Hosted by AI Hive, an NCAI spinoff engaged in national and international research, policy, and innovation programs, this course emphasizes strategic thinking, sectoral insight, and global relevance.

Why This Program Matters ?



Week 1

FOUNDATIONS OF AI, RESEARCH METHODOLOGY & TOOLS

INTRO TO AI

DAY-1

Learning Objectives

Understand AI applications globally and locally; explore interdisciplinary relevance

Activities & Outputs

Icebreaker: "AI in Everyday Life"; Sectoral mapping activity

NATIONAL AI SECTORS

DAY-2

Learning Objectives

Learn 12 AI priority sectors and their societal/economic relevance

Activities & Outputs

Sectoral case study review; Identify global vs local trends

RESEARCH BASICS

DAY-3

Learning Objectives

Frame research questions, identify gaps, structure research plans

Activities & Outputs

Brainstorm research questions; Hypothesis formulation; Plan mini research topics

RESEARCH TOOLS

DAY-4

Learning Objectives

Learn frameworks, literature survey, data collection, and documentation methods

Activities & Outputs

Introduce research outline, synopsis creation, and methodology planning; Guided exercises in literature review; Exposure to academic databases & journals

SYNOPSIS CREATION

DAY-5

Learning Objectives

Draft initial research synopsis including objectives, rationale, and scope

Activities & Outputs

Students receive sector assignments; Prepare mini research synopsis for Week 2 capstone; Mentor feedback

Key Takeaways

- Develop structured research synopses
- Understand how to plan research methodology
- Gain exposure to sectoral frameworks and AI-driven problem identification
- Prepare for capstone research in Week 2

Week 2

SECTORAL AI RESEARCH CAPSTONE

CASE STUDIES

DAY-6

Learning Objectives

Compare global AI applications with local sectoral needs

Activities & Outputs

Conduct structured literature review; Analyze 2–3 global case studies; Document sectoral insights

GAP ANALYSIS

DAY-7

Learning Objectives

Identify sectoral gaps, needs, and research opportunities

Activities & Outputs

SWOT-style analysis; Identify challenges and opportunities in Pakistan; Draft preliminary insights

RECOMMENDATIONS

DAY-8

Learning Objectives

Formulate actionable AI-driven solutions

Activities & Outputs

Draft recommendations: social, economic, technical; Refine strategies with mentor guidance

FINAL REPORT

DAY-9

Learning Objectives

Document research findings, methodology, and recommendations

Activities & Outputs

Prepare final sectoral report; Summarize literature review, methodology, gap analysis, and proposed solutions

PRESENTATION

DAY-10

Learning Objectives

Present research outcomes and receive expert feedback

Activities & Outputs

5-slide presentation: Title & Sector, Research Question & Rationale, Methodology & Tools, Insights & Recommendations, Reflection & Impact; Mentor evaluation; Peer feedback

Key Takeaways

- Conduct rigorous, sector-specific research
- Compare local and global AI applications
- Produce policy and strategy recommendations
- Develop confidence in presenting research to experts

AI Priority Sectors

Healthcare

Education

Agriculture

Governance

FinTech

Infrastructure

Law & Judiciary

Defense & Strategic Organizations

International Collaboration & Knowledge Exchange

Manufacturing Industry

Climate Change

Software Industry

Note: Each student is assigned one sector, enabling focused, actionable research and recommendations.

Skills You Will Develop



Research Methodology



Literature Review



Sectoral Analysis



Gap Identification



Strategy & Policy writing



Critical Thinking



Presentation Skills

How This Helps You ?

- ✓ Stronger university & scholarship applications
- ✓ Globally aligned research experience
- ✓ Confidence in presenting insights
- ✓ Professional portfolio material
- ✓ Understanding of real AI sector challenges





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Join the Cohort
Become a research-driven innovator



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