

Online Workshop

Bharati College | R&D Cell × CDC (Samarth Bharat) | Under IQAC

India's AI in Research Ecosystem Workshop(Basic)

This presentation for Session **3** will provide answers to nearly All of Your Queries,
Questions, Feedback given for Session 1 and 2

Principal: Dr Prof.Saloni Gupta

Training Co-Ordinator: Dr Anubha Bhargava

AI & Data Analytics Leader | Researcher | Educator | 20+ Years Experience

Session 3 of 5

Module: AI in Academia - Legal Ecosystem, AI Tools in Higher Education

Every week - Online (Google Meet) | Starts 6th July 2026

AI USE CASES: ACADEMIC & ADMINISTRATIVE LIFE

YES

KIND OF

NO

Everyday tools already in use across the University



SWAYAM/NPTEL recommending which course to take next, based on your learning history and quiz performance

Uses machine learning on learner behaviour to personalise suggestions — same idea as Spotify recommending music.

YES



A university exam portal automatically computing your CGPA once marks are entered

A fixed weighted-average formula — ordinary software logic, no learning involved.

NO



Turnitin/Urkund flagging matching text against a large database of previously submitted papers

Core matching is largely rule-based text comparison; some tools add AI for paraphrase detection.

KIND OF



A university website chatbot answering student queries about admission dates and fee deadlines

Uses natural language processing to interpret free-text questions and generate responses.

YES

AI USE CASES: RESEARCH & ACADEMIC WRITING

Tools that support scholarship and writing

YES

KIND OF

NO



Grammarly or Microsoft Editor suggesting grammar, tone and style corrections as you type

Trained language models understand context — not just a fixed dictionary or spell-check.

YES



Zotero/Mendeley sorting your reference list alphabetically by author

A simple, deterministic sorting algorithm — no learning or inference.

NO



Semantic Scholar or Elicit.org suggesting related papers based on your research topic

Uses ML-based semantic search to find related work, not just keyword matching.

YES



Excel calculating the mean and standard deviation of your survey responses

Standard statistical formulas — deterministic maths, however 'smart' it may feel.

NO

Part A - AI USE CASES: EXAMS, LABS & CAMPUS LIFE

Where AI shows up beyond the classroom

YES

KIND OF

NO



Online exam proctoring software flagging unusual eye movement or background voices

Computer vision and audio-analysis models detect behavioural anomalies in real time.

YES



Bhashini (Government of India) translating a research abstract from Hindi to English

Built on neural machine translation models covering multiple Indian languages.

YES



A library barcode scanner logging a book's issue and return dates

A simple lookup against a database record — no learning or prediction.

NO



A biometric attendance system matching a scanned fingerprint against a stored template

Basic matching can be simple pattern comparison; advanced systems use ML-based matching.

KIND OF

INDIA'S REGULATORY ARCHITECTURE

"Light-touch, principle-based, multi-layered approach — NOT a single AI Act"

TIER 1 — National Policy & Guidelines

India AI Governance Guidelines 2025 (MeitY) • National AI Strategy (NITI Aayog)

TIER 2 — Statutory Laws

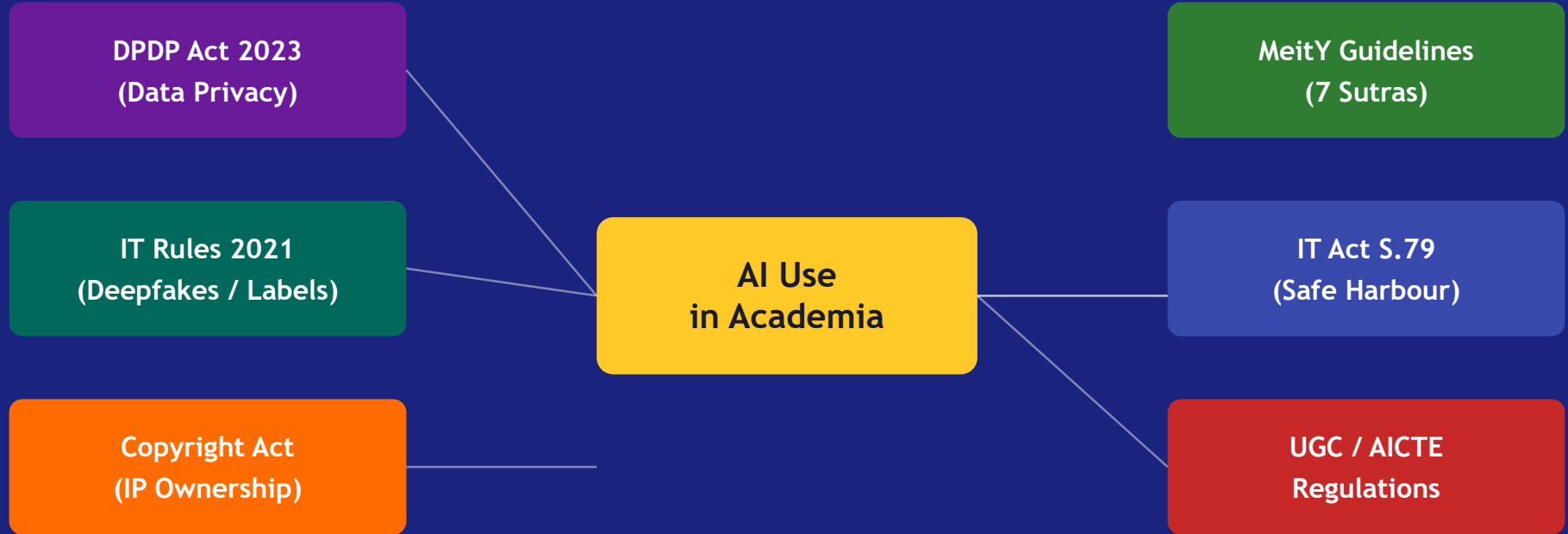
The Digital Personal Data Protection Act - DPDP Act 2023 • IT Act 2000 • IT (Amendment) Rules 2021 • Copyright Act 1957

TIER 3 — Sectoral Regulations & Proposed Legislation

RBI Fintech Guidelines • Competition Commission of India - CCI Algorithmic Transparency • SEBI AI Norms • Digital India Act (Proposed)

Key Principle: India adopts a 'Responsible AI' approach — innovation-friendly, not prescriptive. No blanket ban on AI. Compliance embedded in existing data + IT law.

CROSS-LINKAGES: HOW THE LAWS CONNECT



Example: When an academic uses ChatGPT to write a paper — DPDP (if student data), Copyright Act (ownership), IT Rules (if published online), MeitY Guidelines (responsible use) ALL apply simultaneously.

COPYRIGHT ACT 1957 & AI-GENERATED CONTENT

Critical Question for Academics: Who owns copyright in AI-generated research papers, abstracts & images?

Current Law

AI Cannot Hold Copyright

Under S.2(d) of the Copyright Act, only human "authors" can hold copyright. AI-generated content is not automatically protected — it may enter the public domain unless a human author is identifiable.

High Risk

Training Data & Infringement Risk

Using copyrighted research papers, books or datasets to train AI models may violate copyright unless covered by S.52 (fair dealing). Academic AI training on published journals is legally grey in India.

For Researchers

Moral Rights & Attribution (S.57)

Authors hold rights of integrity & attribution. Using AI to modify or regenerate an academic's work without credit may violate moral rights even after copyright transfer or expiry.

THE THREE STATUTORY PILLARS

(Legal Force) — the statutory laws governing AI use in Indian academia



DPDP ACT 2023 Data Sovereignty

Focuses on Informed Consent (S.5), Purpose Limitation (S.5) for student data, and Data Minimization (S.9) in research surveys.



IT ACT 2000 & RULES 2021 Digital Safety

Mandates Deepfake Labeling (Rule 3(2)) for synthetic media and provides Intermediary Safe Harbor (S.79) for platforms meeting due diligence.



COPYRIGHT ACT 1957 Authorship

Requires human “authorship” (S.2d) for IP protection and protects Moral Rights (S.57) regarding the integrity of an author's original work.

DATA TABLE: IT ACT FOCUS & ACADEMIC APPLICATION

IT Act Section	Regulatory Focus	Academic Application
S. 43A	Data Compensation	Protecting sensitive student databases from leaks.
S. 66E	Privacy Violation	Liability for AI-generated deepfakes or private images.
S. 72A	Breach of Contract	Preventing AI data leaks from licensed academic datasets.

UPCOMING: PROPOSED LEGISLATION ON THE HORIZON

Drafting Stage

Digital India Act (DIA)

Proposed replacement for the IT Act 2000. Expected to introduce dedicated AI and platform accountability clauses. Academic institutions may be classified as "significant digital intermediaries" requiring compliance.

Parliament — Not Enacted

AI (Ethics & Accountability) Bill

A private member bill proposing mandatory ethical review of AI systems, creation of a National AI Authority, and liability rules for AI harm. Not yet enacted but signals strong legislative intent.

Policy Framework

National Data Governance Policy

Governs use of non-personal data including research datasets. Could determine how academic institutions share research data with AI companies. Anonymised data pools for AI innovation under government oversight.

In Development

UGC / AICTE AI Guidelines

Higher education regulators developing AI use policies for universities — expected to mandate AI disclosure in dissertations, regulate AI-based assessment, and set academic integrity standards for GenAI tools.

THE 7 AI SUTRAS

(MeitY Governance Guidelines 2025) — the seven principles behind every rule



1

Safety & Reliability

Ensuring AI-assisted research outputs are high-quality, reproducible, and free from dangerous hallucinations.



2

Fairness & Non-Discrimination

Mitigating algorithmic bias in student evaluations, research scoring, and grant allocations.



3

Transparency & Explainability

Openly disclosing the use of AI tools in methodology sections and identifying the logic behind AI-driven decisions.



4

Privacy & Data Protection

Safeguarding personal information of students and research participants within AI training datasets.



5

Accountability & Oversight

Maintaining “human-in-the-loop” control; researchers bear non-delegable responsibility for all AI-generated findings.



6

Ethics & Human Values

Aligning AI use with academic integrity and the moral rights of original human authors.



7

Innovation & Inclusivity

Leveraging AI to create adaptive learning pathways and support minority language contexts through tools like Bhashini.

PRACTICAL ACADEMIC COMPLIANCE CHECKLIST

(Actionable Steps) — turning the law and the sutras into daily practice



Research & Publishing

Disclose AI tools in methodology, verify every citation against primary sources, and never list AI as a co-author.



Teaching & Content

Label AI-synthesized teaching materials clearly and ensure AI grading tools have meaningful human oversight.



Data & Privacy

Anonymize research datasets before uploading to public AI tools and ensure AI vendors are DPDP-compliant.

Three areas, one habit: disclose, verify, and protect — every time you use AI in your academic work.

PRACTICAL COMPLIANCE CHECKLIST FOR ACADEMICS

Research & Papers

- Disclose use of AI tools in methodology / acknowledgements
- Do not submit AI-only content as your original work
- Verify copyright status of training data used
- Ensure research participant data is DPDP-compliant

Teaching & Content

- Label AI-generated teaching content clearly
- Obtain student consent before using AI with their data
- Preserve human oversight in AI-based grading
- Follow your institution's GenAI use policy

Data & Privacy

- Do not feed personal student data into public AI tools
- Ensure AI vendors are DPDP-compliant data fiduciaries
- Anonymise data before AI-assisted research analysis
- Keep records of consent for AI-processed personal data

Case Study 27

SYSTEM-FACING AND ADMINISTRATIVE

Rabbitt AI: AI admission chatbot reduces helpdesk workload during university admissions

Case Study 31

SYSTEM-FACING AND ADMINISTRATIVE

Technovation: Mobilizing a Global Ecosystem to Prepare Girls for an AI Future

Case Study 15

SYSTEM-FACING AND ADMINISTRATIVE

Government of Rajasthan: Improving Mathematics outcomes through AI-enabled personalised tutoring in Rajasthan

Case Study 36

STUDENT LEARNING

Udhyam Saathi (AI Mentor): Democratising Entrepreneurial Mentorship at National Scale via Multimodal Generative AI on WhatsApp

Case Study 11

STUDENT LEARNING

Directorate of Higher Education, Government of Goa: State-led AI capacity building improves teaching quality across higher

Authors: Dr. Kavita Asnani

Higher Education

Case Study 3

SYSTEM-FACING AND ADMINISTRATIVE

Answerr.ai: Designing Trusted AI Infrastructure for Education

 SOC2 Certified

The #1 AI Infrastructure for Educators

Answerr is an AI platform for education built for universities, colleges, and schools. This AI platform for education enables secure, FERPA-compliant AI adoption with governance controls, multi-model access, and AI usage visibility across the academic ecosystem.

[Free Student Access](#)[Book a Demo](#)**Fragmented AI****Institutional AI Infrastructure**

AI that works where educators work

Brisk is the **AI education platform** helping teachers create materials, give feedback, and adapt instruction inside the Google and Microsoft tools they already use. We call it Classroom Intelligence.

The screenshot displays the 'Boost Whiteboard - Student View' interface. The main workspace contains a math problem: 'Solve: $3x^2 - 12 = 0$. Show your work.' Below the problem, the student's work is shown in a handwritten style: $3x^2 - 12 = 0$, followed by an arrow pointing down to $3x^2 = 12$ with the note '+3 both sides', then an arrow pointing down to $x^2 = 4$ with the note 'take √ of both', and finally an arrow pointing down to $x = \pm 2$, which is circled in a dashed line. Below the work is a number line from -3 to 3 with dots at -2 and 2, labeled $x = -2$ and $x = 2$ respectively. To the right of the workspace is an 'AI Feedback' panel. It shows 'Correct! $x = \pm 2$ ', 'Great job showing your work step by step.', and 'Love the number line! Can you explain why there are two answers?'. At the bottom of the panel is a green circular progress indicator showing '90%'.

Give Feedback

Boost Whiteboard

Create Resources

Inspect Writing

Boost Tutor

Change Level

GET STARTED FREE

SCHOOLS LEARN MORE

Backed by  Microsoft  UC Berkeley  Google

Less time grading, more time teaching

CoGrader is the **AI Essay Grader** that helps teachers **provide quality feedback on essays** in
80% less time



Map a research topic with AI

Get an overview - Find resources - Identify concepts

6 Mio

knowledge maps
created

☐ **PubMed** (life sciences)

☒ **BASE** (all disciplines)

Refine your search ▼

Enter your keyword(s), e.g. „climate change“ and impact

GO

Try out: [digital education](#) [climate change](#) [AND impact](#)

BASE

Discover
400+ million
documents

YOUR AI RESEARCH TOOLKIT

A small, high-quality set — 12 tools, 5 categories. Every one earns its place.



ASSISTANTS

Used across every
stage below



FIND

Discover the literature



WRITE

Draft and cite



REFERENCE

Organize & verify



ANALYZE

Work with data

The next slides walk through each category, with exactly the tools that earned a place — no directory, no clutter, no paid placements.

AI Research Tools: Too much “Noise/Overcrowding/Paid Promotions – YouTube”

AI Research Tools — Complete Landscape

Essential AI-powered tools transforming academic research in Science & Business

Literature Discovery	AI Search & Q&A	Academic Writing	Data Analysis	Reference Management	Integrity & Ethics
Semantic Scholar	Perplexity AI	Paperpal	Julius AI	Zotero + AI	Turnitin
Elicit	Scite.ai	Writefull	ATLAS.ti	Mendeley	iThenticate
Consensus	ScholarAI	SciSpace	NVivo AI	EndNote	Copyleaks
ResearchRabbit	NotebookLM	Grammarly	Code Interpreter	Scholarcy	GPTZero
Connected Papers	ChatGPT	Quillbot	SPSS AI	Paperpile	Unicheck
Litmaps	Gemini	Wordvice	Tableau AI	ReadCube	PlagScan

Tools and Platforms Covered

Gain hands-on exposure to leading AI platforms used across education and professional environments.

Content & Productivity Tools

- NotebookLM
- Napkin AI
- SlidesAI
- Curipod
- Pictory
- HeyGen

Education-Focused AI Tools

- SchoolAI
- Eduaide
- Khanmigo
- Diffit
- MagicSchool
- Formative

Large Language Models

- ChatGPT
- Google Gemini
- Microsoft Copilot
- Anthropic Claude

All tools are evaluated through the lens of responsible, ethical, and pedagogically relevant classroom application.

YOUR ESSENTIAL AI RESEARCH TOOLKIT

A small, high-quality set across 5 stages — not a directory. Every tool here earns its place.

General-Purpose Assistants

ChatGPT

Broad, flexible, widely used

Claude

Strong writing, reading & analysis

Gemini

Deep Google Workspace integration

Perplexity

Search-style answers with sources

Literature & Evidence Discovery

Semantic Scholar

Citation graphs, broad coverage

Consensus

Evidence-based answers, not lists

Open Knowledge Map

Free, non-profit, visual mapping

Writing

Grammarly

General grammar, tone & clarity

Jenni AI

Citation-grounded academic drafting

Reference & Integrity

Zotero

Free, most widely used manager

Turnitin

Institutional standard for checks

Data Analysis

Julius AI

Chat with your own CSV/Excel data

AI ASSISTANTS: USED ACROSS EVERY STAGE

Flexible general-purpose tools — not specialists, but useful everywhere



ChatGPT

FREEMIUM

Broad, flexible general-purpose assistant, widely used across disciplines.

Best for: everyday drafting, brainstorming and quick explanations.



Claude

FREEMIUM

Strong at writing, reading long documents, and analyzing your own data.

Best for: working through a full paper or dataset in one sitting.



Gemini

FREEMIUM

Deep integration with Google Workspace — Docs, Sheets, Drive.

Best for: researchers already living inside Google Workspace.



Perplexity

FREEMIUM

Search-style answers with live web sources and citations.

Best for: quick, cited answers to a specific question.

FIND: LITERATURE & EVIDENCE DISCOVERY

Before you can read the literature, you have to find the right slice of it



Semantic Scholar

FREE

A free scholarly search engine with AI-powered citation graphs across hundreds of millions of papers.

Best for: building a broad reading list and tracking influential citations.



Consensus

FREEMIUM

An AI search engine that answers a specific research question with evidence-backed, cited findings.

Best for: quick, evidence-based answers to a focused question.



Open Knowledge

FREE

A free, non-profit tool that visually maps how research on a topic connects.

Best for: exploring a new field with zero promotional bias — non-profit, no vendor.

WRITE: DRAFTING & CITATION-GROUNDED WORK

From first draft to a submission-ready manuscript



Grammarly

FREEMIUM

A general-purpose writing assistant for grammar, tone and clarity across emails, reports and early drafts.

Best for: everyday writing, not discipline-specific manuscripts.



Jenni AI

FREEMIUM

An academic writing workspace where every claim you write is tied back to an actual, traceable source.

Best for: drafting with citations grounded to real, checkable sources.

Under the **UGC Promotion of Academic Integrity and Prevention of Plagiarism Regulations 2018**, universities use software like Turnitin or Drillbit to scan all submitted theses and published faculty papers. Research Experts

- **Level 2 Plagiarism (40%–60% similarity):** If the software or an expert committee confirms you copied structural research concepts via AI without credit, you are denied your next salary increment and **barred from supervising any new PhD students for 2 years.** Research Experts
- **Level 3 Plagiarism (Above 60% similarity):** You face immediate suspension or dismissal from the university. Research Experts

REFERENCE & INTEGRITY

Keeping your citations organized — and your work verifiably your own



Zotero

FREE

The free, most widely used reference manager — organizes citations and generates bibliographies in any style.

Best for: keeping your reference library organized and consistent.



Turnitin

PAID

The institutional standard for similarity and originality checks, already used across most universities.

Best for: the originality check your institution already trusts.

Crossref and iThenticate v2. The moment your manuscript hits a journal's editorial desk, automated gatekeepers scan its syntactic trees, structural trees, and paragraph signatures. It detects exactly where the machine wrote the content.

Even if it slips past publication, authors set automated tracking alerts on their intellectual property. If they find their research sequence, logic, or structure has been replicated under your name, they don't just sue for copyright infringement—they file a complaint with the **UGC under the 2018 Regulations**. **A Level 2 or 3 plagiarism flag won't just reject your paper; it can freeze your promotions, bar you from guiding PhD scholars, or end your academic career permanently. Your safety isn't in hiding your AI use; your safety is in your transparent human authorship.**"*

ANALYZE: DATA, IN PLAIN ENGLISH

For when your research runs on numbers, surveys or spreadsheets



Julius AI

FREEMIUM

Upload a spreadsheet and ask for statistical analysis, charts and plain-English interpretation of your results.

Best for: quick statistical analysis without writing code yourself, in both lab and business research.

CHOOSING THE RIGHT TOOL

12 tools, 5 categories — curated, not collected. No paid placements.



General assistants

ChatGPT, Claude, Gemini, Perplexity



Finding papers

Semantic Scholar, Consensus, Open Knowledge Map



Writing & citations

Grammarly, Jenni AI



Reference & integrity

Zotero, Turnitin



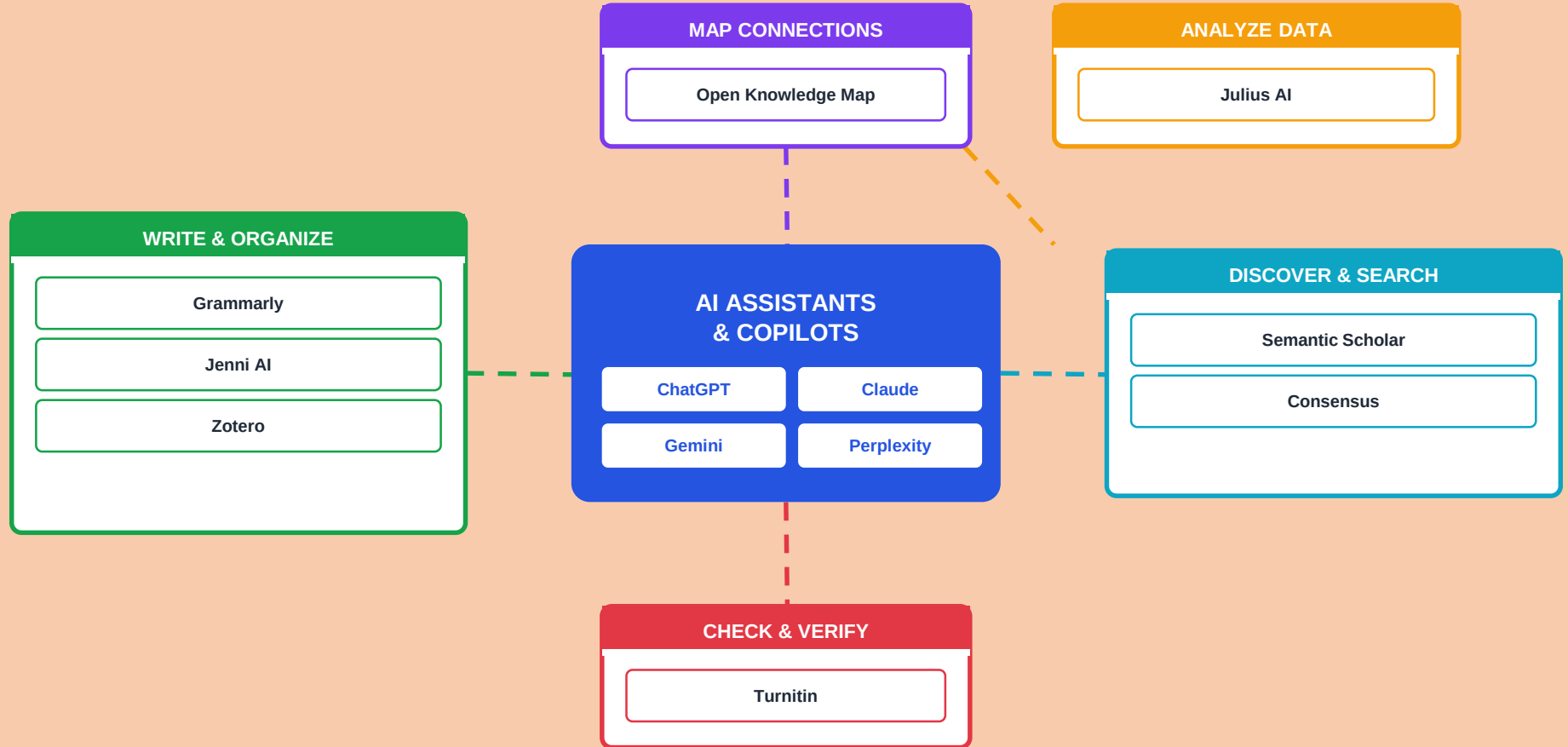
Data analysis

Julius AI

Remember: every tool here can still get a citation, fact or figure wrong. Verify before it goes in your paper.

AI RESEARCH ECOSYSTEM

A small set of vetted tools, each earning a specific place in your workflow



WHAT IS PROMPT ENGINEERING?

Writing instructions that get you an answer worth using

Prompt engineering is the skill of giving an AI tool clear context, a precise task, and the format you want — so it produces a focused, usable answer instead of a generic one.

WHY IT MATTERS FOR YOUR RESEARCH



Literature Reviews

Get a focused synthesis of themes, gaps and methods — not a generic summary.



Academic Writing

Draft abstracts, emails and proposals that already match your tone and audience.



Data & Coding

Get more accurate analysis scripts and outputs in fewer back-and-forth attempts.

KEY TAKEAWAYS FROM SESSION

1

India has NO single AI Act — regulation is multi-layered across DPDP, IT Act, Copyright Act & MeitY Guidelines.

2

The 7 AI Sutras are your ethical compass — every academic AI use should be tested against them.

3

AI-generated content has uncertain copyright protection in India — human authorship remains essential.

4

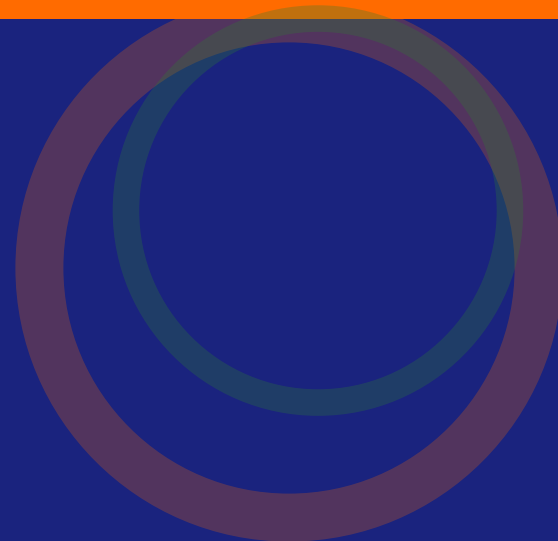
Student & research participant data fed into AI tools triggers DPDP obligations immediately.

5

Transparency & disclosure are non-negotiable — label, cite, and document all AI use in academic work.

NEXT SESSION (Week 2&3): Prompt Engineering for Academic Research - Use cases with AI Research Tools

Thank You



Mr. Anurag Mittal

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Online Workshop — Ethical Use of AI in Research & Teaching

Bharati College | R&D Cell × CDC (Samarth Bharat) | Under IQAC

#IndiaAI

#DPDP2023

#ResponsibleAI

#AILaw

#AcademicIntegrity

Questions & Discussion

Session 1 of 5 | Every Monday 11:00 AM – 12:00 Noon | Online (Google Meet)