Executive M. Tech in

Artificial Intelligence & Data Science Engineering

CS
1 in India
13 in Asia in NLP
csrankings.org*

INDIA TODAY
2 in India Today's MDRA Ranking 2023*

nirf
21 National Institutional Ranking Framework*

QS UNIVERSITY RANKINGS BRICS
106 in the BRICS QS University Rankings*

THE Times Higher Education
601 World University Rank 2024*

Electives

Advanced Communication Systems | Big Data Analytics
Blockchain Technology | Cybersecurity* | Edge (Cloud) Computing
Generative Adversarial Networks (GANs)* | Geotechnical Engineering
Embedded Systems | Internet of Things | Nanotechnology*
Natural Language Processing (NLP) | Robotics | Quantum Computing*

** Minimum 25 candidates are required for each electives

* Conditions Apply

> Hybrid (Online/In Campus)mode of instruction
> IIT Patna Alumni Status

Overview

AI is set to transform business like never before, creating new opportunities for entrepreneurs, business leaders and workers in every industry. IIT Patna's Executive M. Tech in Artificial Intelligence & Data Science Engineering programme has been designed for professionals across industries, looking to gain hands-on knowledge of AI implementation while building the next generation business models.
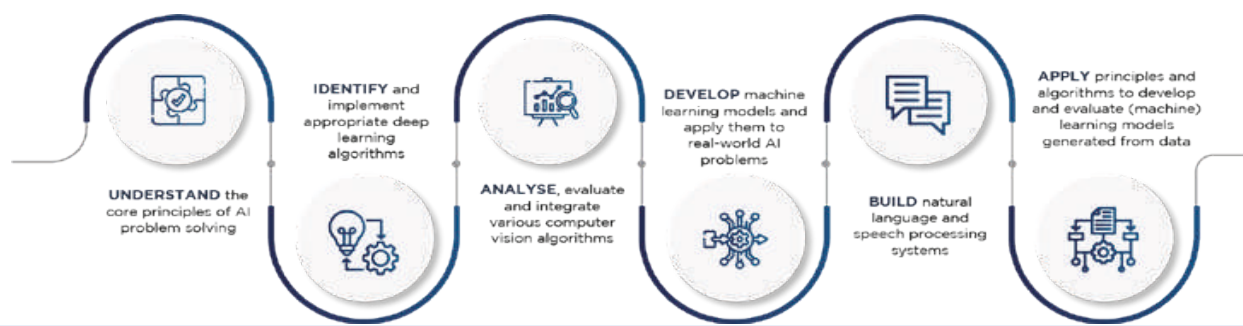
Who is this Programme for?

Early to Mid Level Professionals seeking career growth

This programme is aimed to provide hands-on knowledge of AI implementation especially in the areas of Speech Technologies, Computer Vision and Natural Language Processing to early-career enthusiasts such as: Data Analysts, Business Analysts, Data Scientists, ML Engineers, Computer Programmers, Developers, Softwarer Engineers.

Programme Features

> 100% Live interactive classes (Online) with doubt clearing sessions on weekends

> Fully Complaint to NEP 2020 Curriculum Framework Structure

> Industry Skill Oriented & at par with Global standard

> Course learning outcome mapped with Industry Demand

> Remotely access the eLibrary of IIT Patna

> Unique blend of learning and work experience through PAID APPRENTICESHIP / Internship opportunities based on merit

> Accident & Health Insurance Cover for Students and Parents

UNDERSTAND the core principles of AI problem solving

IDENTIFY and implement appropriate deep learning algorithms

ANALYSE, evaluate and integrate various computer vision algorithms

DEVELOP machine learning models and apply them to real-world AI problems

BUILD natural language and speech processing systems

APPLY principles and algorithms to develop and evaluate (machine) learning models generated from data

Director's Message

It gives me immense joy to welcome you to the Quality Improvement Program (QIP), the new academic unit in the IIT Patna system. QIP aims to combine technology and management to prepare students to explore a future of possibilities. QIP plays a crucial role in upgrading and enhancing the capabilities and skill sets of pursuing graduates/ graduates and working professionals in technology & management education. With its industry-oriented future-centric curriculum, exceptional faculty, and strong international footprint, QIP has the right ingredients to achieve a leadership position among its peers in the time to come.

IIT Patna will undertake the following activities under QIP: Faculty Development Programme (FDP), Short Term Courses, Knowledge Dissemination Programme, National Summer & Winter Term and Internship (NSWTI), International Summer & Winter Term and Internship (ISWTI), Certificate Programmes, Online Courses and Training Programme for the School Students, Certificate Programmes, Executive Programmes.

I wish QIP and all its stakeholders a purposeful and joyful journey ahead and felicitate all its endeavours. I invite you to be part of this exciting journey and participate in the success of QIP at IIT Patna.

I welcome you to become a part of our story and to form a long-lasting association with the institute.

Prof. T.N. Singh
Director, Chief Academic Mentor, QIP, Indian Institute of Technology Patna

Dean (Academics & Administration)
Prof. A. K. Thakur

Prof. A. K. Thakur continuing currently as the Professor of Physics at the Department of Physics at Indian Institute of Technology, Patna & Dean Academics, IIT Patna.
Prof. Thakur is Gold Medalist at M.Sc.(Physics). He is recipient of the coveted "Nehru Fellowship" for pursuing Doctoral Research at the National University of Singapore (QS Rank 8). Currently, he is Vice president of the Asian Society for Solid State Ionics
The research expertise of Prof. Thakur is experimental condensed matter physics and applied physics with interest of specific experimental research comprising;
a). Renewable clean and green energy, b). Solid state Ionic devices, c). Storage cells, d). Solar photovoltaics, e). Dielectrics and Ferroelectrics, f). Processing & fabrication of nanomaterials, g). E.M.I. shielding, h). Battery Management System (BMS) design and fabrication for operational safety of battery packs for EV applications, i). Product design simulation and development for commercialization.

Adean Resource
Dr. Asif Ekbal

Asif Ekbal is an Associate Professor in the Department of Computer Science and Engineering at IIT Patna. He has been working in the broad areas of Artificial Intelligence, Machine Learning and Natural Language Processing since the last 18 years. His research is supported by various Govt bodies (MeitY, SERB etc) and Industries (e.g. Flipkart, Samsung Research, Wipro, Accenture etc). He has been listed in the top 2% scientists published by Stanford University, and is an awardee of Visvesvaraya Young Faculty Research Fellowship (YFRF), Govt of India; JSPS Invitation Fellowship from the Govt of Japan, and Innovative Project Award from the Indian National Academy of Engineering.

Programme Coordinator

Advisory Board Members

Dr. Ravi P. Singh
Secretary General,
Quality Council of India
(September 2014-till date)

UG and PG from BHU, Varanasi, Ph.D and Postdoctoral experience in University of Western Ontario at London, CANADA. Dr Singh has experience in research, teaching and administration for the past more than 18 years in Professor Scale or above.

Past Positions:
Director, Regional Services Division (RSD), IGNOU, Maidan Garhi, New Delhi-110068 (2011-12); Founder-VC, Sharda University (2009-11); Dean, Punjab Technical University (2004-09); Associate Dean, PTU, (2003-04); Deputy Director, AICTE (2001-03); Regional Officer of AICTE, Kanpur (1996- 99) and Kolkata (2000-2001); Assistant Director, AICTE (1996-01).

Education:
Ph.D (1994) and Postdoctoral Fellowship in Physics from Canada (1994-95), Gold Medal from BHU in MSc (1989), NET-CSIR qualified (1989) and Topper of Honors Program in Physics (1987).

Prof. Rajeev Srivastava
Professor CSE & Dean (Resource and Alumni Affairs) IIT (BHU), Varanasi

Prof. Rajeev Srivastava is currently working as a Professor in the Dept. of Computer Sc. & Engineering, Head of the Centre for Computing and Information Services (CCIS) and the Dean (Resource and Alumni Affairs), Indian Institute of Technology (BHU), Varanasi. He also served as Head of the Department of Computer Science and Engineering during August'2017-December'2020. He holds the degrees of B.E., M.E., and PhD all in Computer Science & Engineering and possess 23+ years of teaching and research experience. He is a Fellow of Institution of Engineers (India) (FIE), Institution of Electronic and Telecommunication Engineers (FIETE), Senior Member IEEE USA, and Member ACM USA. He has published around 165+ research papers in reputed international journals andconferences, 04research reference books, and 18 book chapters and a patent. He had been the Principal Investigator of research projects funded by MoE, Govt. of India and DRDO, Govt. of India.He has produced 13 PhDs, and 3 PhD thesis submitted and 04 PhDs are ongoing under his Supervision.He serves as Expert Member on different panels of NBA, UGC, UPSC, DRDO, UPPSC, reputed Institute and Universities of the Govt. of India. His research interests lies in the areas of Artificial Intelligence (AI), Machine Learning, Deep learning, Image and Video Processing, Computer Vision, and Computational Bioinformatics.

Prof. H.P. Mathur
Dean and Head
Faculty of Management Studies (Institute Of Management Studies)
Banaras Hindu University, Varanasi

UG and PG from BHU, Varanasi, Ph.D and Postdoctoral experience in Uni - versity of Western Ontario at London, CANADA. Dr Singh has experience in research, teaching and administration for the past more than 18 years in Professor Scale or above.

Current Affiliation:
Dean and Head, Institute of Management Studies, Banaras Hindu University (FMS-BHU)
Chairman, International Centre, Banaras Hindu University
Chairman, Investment Committee, Banaras Hindu University
Chairman, Placements and Corporate Affairs, Institute of Management Studies, Banaras Hindu University (FMS-BHU)
Promoter Director, Atal Incubation Centre- Mahamana Foundation for Innovation and Entrepreneurship- Institute of Management Studies (Supported by Atal Innovation Mission, NITI Aayog, Government of India
Director/Chairman (Non-Executive), Utkarsh Welfare Foundation
Member, Board of Governors, University of Petroleum and Energy Studies, Dehradun
Member, Departmental Advisory Board, National Council of Educational Research and Training
Positions (Held):
Coordinator, Placement Coordination Cell, Banaras Hindu University
Chief, University Employment and Information Guidance Bureau, Banaras Hindu University
Coordinator, International Centre, Banaras Hindu University

Industry Advisors

www.quantsamurai.com

Increase your Cyber Quotient

Dr. Shourya Roy
Senior Research Director, Flipkart

Rajiv Singh
Founder CEO – Quant Samurai (A Global Cybersecurity Entity)
Advisory Board of The Center For Innovation Commercialization, USA
Advisory Board of School of CyberPeace, India

Entrepreneur Experience:
Founder CEO of IndiCash (A TATA Group Venture), India
Founder CEO of ACCPAC (A Computer Associates Venture), USA

Leadership Experience:
Global Head – Cyber security - Tech Mahindra
Managing Director - Entrust Datacard, USA
President – TATA Communications Banking Infra Solutions Ltd.
Managing Director - Diebold, USA
Managing Director - Computer Associates (CA), USA

- Trusted Security Advisor to Governments, Law Enforcement, Military, and Enterprises across Global Markets. Experience with Military grade Cybersecurity Technologies & Services.
- Expertise in Innovative US Dept of Defense approved Cyber technologies, Silicon Valley & Israel Start-ups.
- NextGen Advanced Cyber Defence, Cyber Upskilling, National Security, and Zero-Trust
- Security Strategy.

Dr. Shourya Roy is a seasoned technology leader with specialization in Artificial Intelligence and Machine Learning. Over the past two decades, he has led data science, data product, and data analytics teams with IBM, Xerox, American Express, and Flipkart. His past work includes a range of foundational and applied research, strategic innovation, product management, and building local and global teams. A thought leader and author of about a hundred peer-reviewed papers in premier journals and conferences and over 30 granted patents.

" Enrol, Educate, Excel and Transform Career Trajectory"

Stat of 2022-23 Placement Session

Placement Percentage : 91.26%

Average Pay Package : 23.09 LPA

Highest Pay Package : 82.05 LPA

No. of visiting company : 165

No. of international offers : 19

Sectors

- Analytics/Consulting,
- Fintech
- Banking & Finance
- E-Commerce
- Ed Tech, IT/Software
- Manufacturing Core
- Research & Development
- Automotive
- Education
- Healthcare
- Logistic & Others.

Indian Institute of Technology Patna

Congratulations

14 IIT Patna Professors featured in Stanford University's list of Top 2% Scientists, 2023

Dr. Sriparna Saha (Computer Science & Engineering)

Prof. T. N. Singh (Director, IIT Patna)

Prof. Naveen Kumar Nishchal (Physics Dept.)

Dr. Asif Ekbal (Computer Science & Engineering)

Prof. Manabendra Pathak (Mechanical Engineering)

Dr. Ranjan Kumar Behera (Electrical Engineering)

Dr. Richa Chaudhary (Humanities and Social Sciences)

Dr. Amarnath Hegde (on lien) (Civil and Environmental Engineering)

Dr. Pratibhamoy Das (Department of Mathematics)

Dr. Anirban Bhattacharya (Mechanical Engineering)

Dr. Surajit Kumar Paul (Mechanical Engineering)

Dr. Maheshkumar H. Kolekar (Electrical Engineering)

Dr. Udit Satija (Electrical Engineering)

Dr. Jagannath Malik (Electrical Engineering)

"Enrol, Educate, Excel and Transform Career Trajectory"

Ranked * 2nd
in Emerging Government Colleges in a Best College Ranking 2022 by India Today-MDRA

Ranked* 9th
for placement records

Ranked * 10th
Best Government Engineering College in the performance category overall

3300+ * Alumni
serving national and international institutions at leadership positions

Stand out with this IITP MTech Degree Certificate

A student is declared eligible for the award of an Executive M.Tech. degree if:

He/she has completed all of the credit requirements for the degree with a grade of DD or higher in each of the subjects (Theoretical, Laboratory, Workshop, Sessional, etc), Seminar, Project, and so on.

Obtained a CPI of 6.0 or higher at the end of the semester in which he/she has completed all degree requirements

Note:
-All certificate images are for illustrative purposes only and may be subject to change at the discretion of IIT Patna.

IIT Patna Alumni Benefits

Access to Lifelong IIT Patna Email ID.
Permanent access to the e-library of the institute.
Concession in IIT Patna Guest House accommodation

charges.
Easy access to the campus and sports and gym facilities at IIT Patna..

Network with global alumni community and opportunity to promote startup ideas as well as their owned business.

Organise events on campus such as Homecoming events, Alumni awards ceremonies, and Reunions. Invitation to Alumni Specific events during College Fests.

100% PLACEMENT SUPPORT*

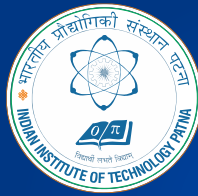| FEE STRUCTURE		
Gen Candidate:	**Fee For SC/ST/OBC/Min/EWS**Candidate	**International Candidates**
Registration Fee		
₹5,000 (Included In Semester Fee	₹5,000 (Included In Semester Fee	$100 (Included In Semester Fee
Semester Fee		
₹64,500 Per Semester	₹59,000 Per Semester	$1,810 Per Semester
Exam & Other Activities Fees		
₹8,500 (Per Semester)	₹8,500 (Per Semester)	– – –
Alumni Fee (One Time)		
₹6,000 (One Time)	₹6,000 (One Time)	$ 150 (One Time)

Multiple EMI options available with 0% interest and 0 down payment*

Seats are filling up fast for this exciting Master's Degree program and early applications are encouraged!

* Conditions Apply

Indian Institute of Technology Patna

Live Online Preparatory Classes shall start w.e.f 30 March 2024, followed by Assignments & Assessments till 15th June 2024

June 2024 Assessment & Doubt Clearing QA Sessions.

w.e.f July 2024 onwards Regular Classes of 1st Semester.

1st Term Exam in Dec 2024

Regular Classes of 2nd Term Jan 2025

2nd Term Exam May 2025

3rd Semester Classes - Dissertation work starting July 2025 onwards.

Presentation on Thesis or Dissertation.

Final Term Research Paper Publication with Programme Coordinator.

Final Assessment.

Award of Degree Certificate during Convocation (2026).

Indian Institute of Technology Patna
भारतीय प्रौद्योगिकी संस्थान पटना

Kanpa Road, Bihta, Patna – 801106, India, Phone: 06115-233102

Ministry of Education
Government of India
सत्यमेव जयते

Executive M.Tech
Elective Options & Programme Co-Coordinators Details

1. Computer Science:
- Cybersecurity - Edge- (Cloud) Computing - Blockchain - Quantum Computing   -Edge (cloud) Computing & -IoT

Prof. Rajeev Mishra, HOD, CSE IIT Patna & his team

2. Electronics:
- Internet of Things (IoT) - Embedded Systems - VLSI Design - Robotics - Advanced Communication Systems

Dr. Sai Kiran CEO, TIH- IIT Patna & his team

3. Drone Technology:
- Unmanned Aerial Vehicles (UAVs) Design - Computer Vision for Drones - Autonomous Systems - Aerodynamics and Flight Dynamics

Dr. Amit Verma, HOD (I/C) Department of Civil Engineering IIT Patna & his team

4. Civil Engineering:
- Structural Health Monitoring - Building Information Modelling (BIM) - Smart Cities Technology - Sustainable Construction - Geotechnical Engineering

Dr. Amit Verma, HOD (I/C), Civil Engineering & his team

5. Material Science:
- Nanotechnology - Biomaterials - Advanced Materials for Energy - Smart Materials - Composite Materials

Dr. Anup Keshari ADean RnD & PD-TIH, IIT Patna & his team

6. Data Science:
- Big Data Analytics - Natural Language Processing (NLP) - Predictive Analytics - Data Engineering - Computer Vision
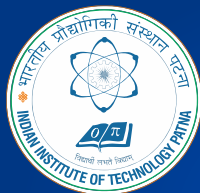
Dr. Asif Ekbal, Dr. Sriparna Saha and the team

7. Artificial Intelligence Engineering:
- Reinforcement Learning - Explainable AI - AI Ethics and Governance - Generative Adversarial Networks (GANs) - Edge AI

Dr. Asif Ekbal, Dr. Sriparna Saha and the team

Central Lecture Hall, IIT Patna

Indian Institute of Technology Patna
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Government of India
सत्यमेव जयते

Executive M.Tech
Preparatory Class Schedule

1. March 30, 2024
Introduction to Computer Science and Engineering
Introduction to Artificial Intelligence and Data Science Engineering
Interaction for Query Schedule (Q&A)

2. April 06, 2024
Fundamentals of Data Structures
Fundamentals of Theory of Computation
Assignment on Data Structure using C

3. April 13, 2024
Tutorial on Python

4. April 20, 2024
Preliminary of Algorithms
Search in AI and Data Science

5. April 27, 2024
Assignments on Algorithms
Assignment on AI and Data Science using Python

6. May 04, 2024
Database Preliminary
Fundamentals of Machine Learning

7. May 11, 2024
Assignment on database
Assignment on machine learning

8. May 18, 2024
Supervised Machine Learning
Unsupervised Machine Learning

9. May 25, 2024
Research Trends-2: AI, Data Sciences and CSE

10. June 01, 2024
Research Trends-1: AI, Data Sciences and CSE

11. June 15, 2024
Sample Assessment shall be treated as a reference for the semester examinations.

Major Organizations where Participants work

Organizations where Participants are employed at the time of joining the programme

CALL TO FIND OUT MORE
+91 9021156156
+91 7309550000

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+91 9795089000
+91 8418800000

VISIT OUR WEBSITE
https://iitp-cep.in
(Admission Portal)
https://cetpgex.iitp.ac.in
(Academic Portal)

EMAIL US:
info@iitp-cep.in

HOW IT FITS WITH YOUR CAREER?

Degree Certificate

अभिषद की अनुशंसा पर
भारतीय प्रौद्योगिकी संस्थान पटना
के अभिशासक परिषद द्वारा

xxxx

प्रौद्योगिकी परास्नातक की उपाधि आर्टिफीसियल इंटेलिजेंस
में छब्बीस अगस्त दो हज़ार चौबीस को पटना में प्रदान की गयी

The Board of Governors
of the
Indian Institute of Technology Patna
upon the recommendation of the Senate hereby confers the degree of
Executive Master of Technology in Artificial Intelligence
on

XXXX

given at Patna on this Twenty Sixth day of August, Two Thousand Twenty Four

Registrar   Director   Chairman, Board of Governor

Date: 26 Aug 2024

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HOW IT FITS WITH
YOUR CAREER?

Indian Institute of Technology, Patna

Bihta, Patna -801106 (Bihar)

Ministry of Education, Govt. of India

READY TO ADVANCE YOUR CAREER?

APPLY NOW

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(Academic Portal)

SPEAK TO A PROGRAM ADVISOR
HAVE QUESTIONS ABOUT THE PROGRAM OR
HOW IT FITS WITH YOUR CAREER?

CONTACT FOR ADMISSIONS

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