



Wipro WIN Research Fellowship for Admission into BITS Pilani PhD Program

About Wipro Infrastructure Engineering

Wipro Infrastructure Engineering (WIN) is a global leader in precision-manufacturing solutions, specializing in hydraulic cylinders, industrial automation, aerospace, water treatment, and additive manufacturing. With a commitment to excellence and innovation, WIN serves diverse industries like robotics, automotive, construction, aerospace, and mining, driving technological and operational excellence.

Research Overview

The Wipro WIN Research Fellowship supports PhD enrolment at BITS Pilani to pursue cutting-edge research, drive technological innovation and enhance WIN's competitive edge in smart technologies, sustainability, and cross-domain solutions.

Research Experience

PhD students will engage in an enriching research experience through the Wipro Research Division, collaborating on projects in key areas such as motion components and autonomous control, AI and computer vision, material science, electronics, and advanced manufacturing processes. Fellows will interact closely with Wipro's R&D engineers, participate in regular symposiums, and visit Wipro factories to gain hands-on exposure to industrial applications. These opportunities, facilitated in parallel with the facilities at BITS campus, ensure a dynamic blend of theoretical and applied research, preparing students for impactful contributions.

Research Topic: Physics-Informed Digital Twin for Urban Water Distribution Networks

Guide(s) Name(s): Santonu Sarkar, Snehanshu Saha, Amitava Das Campus Name: BITS Pilani K K Birla Goa Campus

Fellowship Details

Fellowship Amount: The fellowship will provide a stipend of INR 37,000/- + 27% HRA per month. Fellowship will be enhanced after completing 2 years. Research scholars will receive support for domestic and international travel, as well as contingency funds for project work.

Why should you consider this opportunity

- 1. You will work on a state-of-the-art, business-relevant research problem; thus, your effort to identify a research-worthy problem is significantly reduced. This can help you close your research more quickly.
- 2. You will be in constant touch with Wipro Engineers and have clear visibility of your research direction. The fact that your work has a high potential of being absorbed by the industry should be very satisfying. Such opportunities are rare.





- 3. Your interaction with the business will give you a rare opportunity to understand the real industrial functioning.
- 4. You will receive an additional contingency grant and travel support to present your work in top venues.
- 5. There will be departmental support to present your work for top conferences (max 1.5L for a CORE A* conference)
- 6. You may also get institute support to attend a conference (once a year)

Eligibility Criteria:

This research project demands a candidate who can work at the intersection of advanced AI/ML techniques, physical systems modelling, and practical engineering implementation. This research is ideal for individuals seeking to strengthen both their theoretical foundations and hands-on technical experience.

Essential Qualifications:

- **Master's degree** in Computer Science or Electronics. GATE/NET qualification is required in general. *Exceptional bachelor's or master's students with demonstrated research evidence will also be considered even when they do not have a GATE/NET score*.
- **A strong mathematical foundation**, including differential equations, numerical methods, optimization theory, and statistical modelling, is necessary.
- **Programming proficiency** in Python and experience with deep learning frameworks (such as but not limited to PyTorch, TensorFlow)
- CGPA requirement: Minimum 7.5/10 (or equivalent) in both UG and PG

Core Competencies:

- **Machine Learning & AI**: Experience with neural networks, particularly Physics-Informed Neural Networks (PINNs), or willingness to learn these topics fast
- Data Science: Experience with sensor data processing, time series analysis
- Mathematical Modeling: Numerical Methods

Desirable:

- Knowledge of graph neural networks (GCNs) and reinforcement learning
- Familiarity with Edge computing architectures and IoT systems
- Experience with NVIDIA development tools (RAPIDS, Omniverse) or similar platforms

Expectations from the selected candidate:

- **Research methodology**: Ability to conduct literature reviews, design experiments, and analyze results
- **Technical writing**: Strong publication and documentation skills

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- **Problem-solving**: Demonstrated ability to tackle complex, interdisciplinary challenges
- Full-time enrolment: Commitment to a 4-year research program
- Availability for fieldwork and pilot deployments if required
- Willingness to work in secure, on-premise environments when required

Deadline for submitting applications is 30th June 2025