

# Dr. Sunil Kumar Bisoyi

+91-9776770787, sunilbisoyi2022@gmail.com

## PROFESSIONAL SUMMARY

Results-driven professional with diverse experience across innovation, industrial operations, and cross-disciplinary project leadership. Proven ability to lead initiatives involving AI/ML, IoT, and sensor-based solutions in mining and industrial safety. Skilled in interdisciplinary coordination, project management, and strategic implementation of smart technologies to advance the vision of Industry 4.0.

## PROFESSIONAL EXPERIENCE

**Programme Manager, WIN CoE, IIT (ISM) Dhanbad** **April 2025 - Present**

- Leading the Center of Excellence operations, managing funding and resources for high-impact innovation projects in AI/ML in Mining and Exploration, Critical Minerals, and Circular Economy.
- Overseeing project execution and cross-disciplinary collaboration between researchers, technologists, and industry partners.
- Driving innovation strategies aligned with Industry 4.0 goals for mining and allied industries.
- Facilitating infrastructure development and institutional partnerships.

**Research Associate (PostDoc), IIT (ISM) Dhanbad** **June 2023 - Jan 2025**

- Led development of an energy-efficient cyber-physical system for real-time mine slope health monitoring using wireless sensor networks.
- Managed end-to-end deployment of ZigBee-based mesh networks for slope movement data acquisition and central monitoring.
- Coordinated sensor integration and testing in live mining environments and delivered the system at ECL.

**Guest Faculty, GCE Keonjhar** **Nov 2022 - May 2023**

- Delivered undergraduate-level courses on Environmental Management and Mine Development, ensuring comprehensive coverage of theoretical concepts and industry practices.
- Mentored final-year undergraduate students in the successful execution of their major project work.

**Graduate Mining Engineer, HZL, Vedanta** **Aug 2013 - June 2014**

- Supervised production sections, workforce deployment, and daily development & production planning in underground mines.
- Contributed to operational safety and efficiency through process monitoring.

## EDUCATION

**PhD** **Jan 2017 - Nov 2022**  
National Institute of Technology Rourkela

- Worked on AI-based hybrid prediction models for blast induced ground vibration in opencast mines.

**M.Tech.** **Aug 2014 - Apr 2016**  
Indian Institute of Technology Kharagpur

- Worked on IoT-based fleet management system with wireless sensor network.

**B.Tech.** **Aug 2009 - Apr 2013**  
National Institute of Technology Rourkela

### **TECHNICAL COMPETENCIES**

- Project & Operations Management: Resource allocation, cross-disciplinary team leadership.
- Technology Integration: IoT, wireless networks (ZigBee, LoRa), AI/ML applications for industrial operation.
- Software & Tools: Python, MATLAB, C++, Surpac, ANSYS.
- Data Analytics: Predictive modeling, neural networks, meta-heuristic algorithms, optimization.

### **OTHER PROFESSIONAL CONTRIBUTIONS**

- Authored & co-authored multiple peer-reviewed technical papers and book chapters in AI, IoT and Mining technologies.
- Reviewed for prestigious publications including IEEE, Springer, Elsevier and Sage

### **ADDITIONAL INFORMATION**

- **Languages:** English, Hindi, Odia.
- **Date of Birth:** 05<sup>th</sup> May 1991
- **Hobby:** Photography, Hiking, Movies