Title of Your Abstract for DIGMIN 2025 Conference

Instructions to Prepare an ABSTRACT for DIGMIN 2025

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**Abstract**

DIGMIN 2025 is not just another mining conference. Still, it aims explicitly to bring together the mining, software, computing industries, and academia to discuss applied digital and AI/ML methods that target real-world applications from the computational sciences. Fields are mentioned in the themes on the next page. We hope that this conference will benefit from the breakthroughs shared at DIGMIN 2025. With this first-of-its-kind thematic conference, we aim to create a platform where participants can exchange ideas about non-orthodox, creative ways of using quantum devices, such as in hybrid configurations with classical computing hardware.

If you are interested in presenting your work at DIGMIN 2025, please submit an abstract of **about 500 words or less (and preferably one or two figures that illustrate your work)** **no** **later than July 15, 2025**, through the abstract submission system.

You can find detailed information about the conference themes in the attached brochure. For further updates and logistics, please visit the official website: <https://international-conference-digimin-2025.vercel.app>. Submissions and queries may be directed to: digmin2025@iitism.ac.in or sagarwal@iitism.ac.in. To help the abstract review process and the assignment of presentations to slots in the program, we request that you prepare your abstract according to the following structure: The email address of the primary author must be provided in the footer. The email address should be double-checked, as it will be used as the primary means of contacting the authors. The abstract must be submitted in word format. At the end of abstract, two to four keywords should be provided. Keywords are a tool to help indexers and search engines find relevant papers.

***Keywords****: MAX 6 (eg. Key Words: Mining Industry 5.0, Sustainable Mining, Digital, Intelligent)*

*Theme: Identify one theme only that corresponds to your paper*

1. **Digital Foundations for Smart Mining**

* Integration of IoT, cloud, and edge computing in mine operations
* Blockchain in critical mineral supply chains
* Pit to Port automated operations

1. **Robotics and Automation in Harsh Mining Environments**

* Autonomous drilling, blasting, and hauling systems
* Swarm robotics for exploration and maintenance
* Human-robot collaboration in underground and confined spaces

1. **Edge AI and Real-Time Analytics in Mining**

* Low-latency AI applications for critical mine operations
* Edge devices for environmental and structural monitoring
* Federated learning in distributed mine networks

1. **Geospatial Intelligence and Digital Mapping**

* AI-powered remote sensing and satellite imaging
* 3D subsurface modeling using LiDAR and hyperspectral data
* Integration of GIS, drones, and ground-penetrating radar

1. **Digital Resilience and Disaster Management in Mining**

* Design of intelligent operation centers
* Integration of AR/VR for remote inspections and diagnostics, enabling remote decision-making with digital twins

1. **Energy Efficiency and Process Optimization**

* AI for optimizing crushing, grinding, and material handling
* Dynamic control of furnaces and kilns using digital feedback
* CPS-enabled real-time energy monitoring and reduction strategies

**1. Problem description and relevance (50 words)**

Describe the concrete problem that your approach is going to solve and its relevance as a real-world application.

**2. Methodology (50 words)**

Describe the concrete methodology of your work and how results are extracted. As the specific aim of DIGMIN 2025 is to discuss applied quantitative or qualitative methods, presentations should discuss the underlying methodology rather than focusing exclusively on results.

**3. Practical demonstration (50 words)**

Describe how you demonstrate the correct functioning of your approach through a simple figure

**4. Application potential (50 words)**

Describe the potential of your approach to be scaled up to solve realistic problem sizes, e.g.,

The total number of words should not exceed 500 words. Abstracts that do not follow this structure might not be considered in the review process.

Please indicate your preference for

( ) oral presentation

( ) poster presentation

The final decision on oral or poster presentation will be made by the scientific committee.