

Systems Analytics Department

Systems analytics for modern mining

- + **Advanced data analytics** supporting informed decision-making
- + **ICT and AI innovations** serving industry
- + **From data to decisions** – models that understand underground mines
- + **Design and implementation of innovative solutions** for industry.



Our Services

Our expertise centres on comprehensive data analytics for the mining sector. We are an interdisciplinary team with extensive experience in systems analytics tailored to the specific operational and organisational requirements of underground mining, particularly in the development of advanced algorithms, AI models and management decision-support systems. Our approach integrates knowledge from mathematics, computer science and mining engineering. For more than a decade, our research, specialist services and ready-to-deploy solutions have supported the day-to-day operations, decision-making processes, and long-term strategic objectives of KGHM Polska Miedź S.A.

Our offer includes:

- + **Dedicated analytics and decision-support solutions** – from predictive models to advanced management dashboards,
- + Modern diagnostic systems and **IoT monitoring solutions**,
- + **Tailor-made implementations**,
- + **Development of specialised language models and AI algorithms** that replicate expert reasoning.

Our experience – Selected implementations

- + **Systems for estimating infrastructure reliability indicators** based on AI and text mining,
- + **Machine efficiency assessment systems** based on data from anti-collision systems,
- + **Management dashboards** for analysing the energy efficiency of renewable energy source installations in mines,
- + **An IoT platform** for monitoring tailings storage facilities,
- + **Large Language Models (LLMs)** supporting decision-making processes,
- + **Inertial positioning systems for mining machinery** in underground mines,
- + **Infrastructure and process diagnostics**, ranging from automatic event detection to advanced signal analysis and optimisation tasks.

Contact us

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