

PhD Position in Mine Electrification and Automation
The Pennsylvania State University

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Posted Oct. 22, 2024, set to expire Feb. 21, 2025

Job Title	PhD Position in Mine Electrification and Automation
Department	Department of Energy and Mineral Engineering, and Department of Mechanical Engineering
Institution	The Pennsylvania State University University Park, Pennsylvania
Date Posted	Oct. 22, 2024
Application Deadline	Open until filled
Position Start Date	January 2025
Job Categories	Graduate Student
Academic Field(s)	Robotics Mining/Minerals Mechatronics Mechanical Engineering Engineering Mechanics Electrical and/or Electronics Computer Science Engineering - Other
Apply By Email	
Job Description	

Mine electrification will be critical in enhancing health of the mining personnel and safety of the operations. In this context, the goal of our research is to facilitate electrification through the development of physics-informed models as well as decision-making and monitoring algorithms for safe autonomous operations. The research requires a combination of control theory, machine learning techniques, and computational modeling tools. One Ph.D. research assistantship position is available in the College of Earth and Mineral Sciences at The Pennsylvania State University. The successful

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candidate will jointly advised by faculty members in the Department of Energy and Mineral Engineering, and Mechanical Engineering. The student is expected to conduct research on one or more of the following topics: (i) Ventilation modeling using physics-informed and machine learning-based high fidelity and reduced order techniques, (ii) Ventilation estimation, prediction, and monitoring in electrified mines, and (iii) Control theory based autonomous decision-making under emergencies. The successful applicant will be awarded a competitive scholarship covering both tuition and living expenses.

Preferred start date: January 2025.

Preferred Experience:

We invite applications from all candidates with a strong engineering background. Master's degree is preferred but not required. Hands-on experience in designing and performing experiments is a plus. The successful candidate will: (i) Be skilled in computational thermo-fluid modeling, controls, and machine learning; (ii) Have a Bachelor's or Master's degree with major/specialization in mining, mechanical, electrical, mechatronics, controls, or any other relevant engineering discipline.

Application Process:

Interested candidates should email Dr. Ashish Ranjan Kumar at awk5528@psu.edu with subject line "PhD Position – Penn State EME", and attach following in one pdf file: (i) List of courses taken in computational thermo-fluids, controls, machine learning, (ii) Detailed curriculum vitae, (iii) Academic transcripts (unofficial transcript is fine), and (iv) Copy of previous publications or writing samples (if any).

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

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Contact

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