Machine Learning Engineer III

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Job No: 26056
Department: Michigan Tech Rsrch Institute(MTRI)
Work Type: Staff - Full Time
Full Time / Part Time: Full Time
Categories: Computing, Research
Applications Close:
Sub Department: Michigan Tech Research Institute (MTRI)

Michigan Technological University is an R1 technological research university founded in 1885 in Houghton. Our rural campus is situated just miles from Lake Superior in Michigan's scenic Upper Peninsula and is home to nearly 7,500 students from more than 60 countries around the world. Consistently ranked among the best universities in the country for return on investment, Michigan's flagship technological university offers more than 185 undergraduate and graduate degree programs. Research focus areas include defense, health, energy, automotive, environment, and aerospace.

The area's waters, forests, and snowfall support year-round recreation, including skiing, snowboarding, hiking, biking, and paddling. The University is an integral part of the region, supported by a friendly and welcoming community that takes pride in being a true college town. We embrace our size, climate, sense of adventure, and originality.

Summary

At Michigan Technological University is seeking a Machine Learning Engineer III for our Michigan Tech Research Institute (MTRI) department. At MTRI, we develop advanced technologies that help our nation better understand, sense, and operate within complex natural and human-made environments. Our work spans multidisciplinary research and applied development, advancing ideas from foundational concepts to mission-relevant prototypes.

We are seeking a Senior Machine Learning (ML) Engineer to lead technical efforts in applied ML research and development (R&D).

This role focuses on designing, developing, and evaluating advanced ML algorithms and systems, leading technical execution across research programs, and advancing capabilities from early-stage concepts through prototype demonstration. The successful candidate will serve as a technical leader within projects and contribute to proposal development and research direction.

Candidates for this position may opt to work in either Ann Arbor, MI or Dayton, OH.

Responsibilities and Essential Duties

1. Lead the development and evaluation of ML algorithms, models, and prototype systems
2. Lead design, development, and evaluation of ML models for structured, unstructured, and sensor-derived data
3. Lead technical execution of ML efforts within research programs
4. Translate sponsor needs into technically sound ML approaches within project scope
5. Define experimental design, validation strategies, and performance metrics to assess model performance and robustness
6. Architect ML pipelines for data ingestion, training, validation, and deployment
7. Present technical results to sponsors and contribute to reports, publications, and briefings
8. Develop and evaluate prototype ML systems, including integration with sensing, software, or hardware platforms
9. Advance ML capabilities across TRLs 2-6 through modeling, experimentation, and demonstration
10. Contribute to proposal development and technical direction within research efforts
11. Mentor junior engineers and support development of technical staff
12. Commit to learning about continuous improvement strategies and applying them to everyday work. Actively engage in University continuous improvement initiatives
13. Apply safety-related knowledge, skills, and practices to everyday work.

Required Education, Certifications, Licensures

Master's or PhD in Computer Science, Electrical Engineering, Applied Mathematics, Physics, or related field

Required Experience

1. Minimum of 6 years of relevant experience in applied ML research or ML system development
2. Experience leading technical tasks or workstreams within ML projects

Desirable Education and/or Experience

1. 8-12 years of experience in a related technical field
2. Experience serving as PI or Technical Lead on funded research projects, including responsibility for scope, execution, and deliverables
3. Experience leading technical proposal efforts (BAAs, SBIR/STTR, RFPs)
4. Experience contributing to research proposal capture strategy
5. Experience contributing to publications or conference presentations
6. Experience coordinating small teams or groups within ML-focused projects

Required Knowledge, Skills, and/or Abilities

1. Ability to obtain a U.S. Department of Defense security clearance, which requires United States citizenship. Obtaining a national security clearance while holding a dual citizenship will not be possible when the foreign country poses a risk to the national security of the United States
2. Strong knowledge of ML frameworks (e.g., PyTorch, TensorFlow) and Python-based development
3. Proficiency in Python and scientific computing libraries
4. Ability to design and execute rigorous experimental methodologies
5. Ability to communicate technical concepts to sponsors and stakeholder

Desirable Knowledge, Skills, and/or Abilities

1. Active government security clearance at Secret-level or higher
2. Knowledge of sensor-integrated ML (e.g., RF, SAR, geospatial, multimodal data)
3. Experience with MLOps and scalable ML infrastructure
4. Ability to deploy ML systems in secure, hybrid, or HPC environments
5. Ability to guide research technical direction across multiple related efforts or capability areas of a program

Work Environment and/or Physical Demands
WORK ENVIRONMENT: The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions. The noise level in the work environment is usually low to moderate

Required Training and Other Conditions of Employment

Every employee at Michigan Technological University will receive the following 4 required trainings; additional training may be required by the department.

Required University Training:

- Employee Safety Overview
- Anti-Harassment, Discrimination, Retaliation Training
- Annual Data Security Training
- Annual Title IX Training

Additional training will be required by the department on a periodic basis.

Background Check:
Offers of employment are contingent upon and not considered finalized until the required background check has been performed and the results received and assessed.

Full-Time Equivalent (FTE) % (1=100%)
1

FLSA Status

Exempt

Appointment Term

12 months

Shift

Pay Rate/Salary

Salary is commensurate with experience and qualifications

Title of Position Supervisor

Senior Research Engineer

Posting Type
Internal and External

Dependent on Funding
Yes

Additional Information

This position is contingent upon the continued availability of external funding.

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed are representative of the knowledge, skill, and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

If you require any auxiliary aids, services, or accommodations during Michigan Tech's hiring process please notify the Human Resources office at 906-487-2280 or hr-help@mtu.edu.

Other Conditions of Employment:
Please note that successful applicants are responsible for ensuring their eligibility to work in the United States (i.e. a citizen or national of the United States, a lawful permanent resident,

a foreign national authorized to work in the United States without the need of an employer sponsorship) on or before the effective date of your appointment, and maintain eligibility without sponsorship throughout your appointment.

Michigan Technological University is an Equal Opportunity Educational Institution/Equal Opportunity Employer that provides equal opportunity for all, including protected veterans and individuals with disabilities.

The Annual Security and Fire Safety Report contains current campus safety and disciplinary policies, crime statistics for the previous 3 calendar years, and on-campus student housing fire safety policies and fire statistics for the previous 3 calendar years. Michigan Tech will provide a paper copy upon request; please contact the Michigan Tech Public Safety.

In compliance with the federal Drug-Free Schools and Communities Act (DFSCA) and its implementing regulations (34 CFR Part 86), Michigan Tech is committed to maintaining a drugfree campus environment and actively promoting the health and safety of its community. Find our notice that outlines the University's policies, legal sanctions, health risks, and available support resources related to the unlawful possession, use, or distribution of illicit drugs and alcohol.

Required Education, Certifications, Licensures* (minimum requirements)