

## MDA Corporation

**PLEASE READ THE JOB DESCRIPTION AND THE PRE-EVENT VIDEO INTRODUCTION QUESTIONS BELOW BEFORE PAYING FOR YOUR VIDEO PROCESSING FEE**

### **Senior Control Engineer Machine Intelligence**

The MDA facility in Brampton,, Ontario has supported human spaceflight for the past 30+ years through the design and operational support of space robotics systems such as Canadarm on the Space Shuttle, and Canadarm2 and Dextre on the International Space Station. In addition, this site develops rover technology for Moon and Mars missions, space-borne sensors for planetary exploration missions, as well as a multitude of terrestrial spin-offs for medical robotics and nuclear power plant operations. MDA is currently exploring future opportunities in areas such as AI-based robotics for Lunar Gateway (the next international space station, which will orbit the moon), on-orbit satellite servicing, and next-generation space missions.

MDA is currently seeking a Senior Engineer/Member of Technical Staff to act as the co-lead systems architect and technical authority of machine intelligence and machine learning systems at MDA's Robotics and Space Operations division in Brampton. The successful candidate will report to Program Management and Product Development Management and will interface with the Senior and Executive Management Team. As a lead architect, the incumbent will act as the recognized technical authority in Machine Intelligence/Machine Learning development, supporting program and product initiation, advanced design formulation, pursuit, and capture phases of new rover development projects.

As machine intelligence systems architect, the candidate will:

- Perform operations analysis of robotic mission planning, operation, and post-flight assessment
- Identify processes in the development and verification of safety- and mission-critical robotic operations planning and execution that are candidates for the transparent application of machine intelligence methods
- Identify applications of data trending and health monitoring that are candidates for the application of machine intelligence methods
- Identify opportunities to maintain safety while increasing autonomy, accelerate operational timelines, lower operational costs, and improve the

efficiency of human operators in the end-to-end operations of flight robotic systems

- Roadmap machine intelligence application development for early adoption by the Mobile Servicing System program with an intent to mitigate risk for developments for future space robotic servicing projects
- Roadmap the development for machine intelligence application development for the Deep Space Gateway robotic servicing system
- Establish partnerships with Small- and Medium-sized Enterprises (SMEs) and universities to evolve the technology roadmaps, to promote collaborative development centres, and to address road mapped challenges
- Plan, initiate, and lead internal development projects in machine learning and machine intelligence
- Bear responsibility for the coordination and generation of the top-level Machine Intelligence system requirements, based upon the user/customer needs and other constraints
- Ensure requirements are consistent, complete, correct, traceable, and operationally defined.
- Lead a multi-disciplinary team to generate performance models and error budgets to ensure that adequate design margins are provisioned to the design team.
- Serve as Technical Authority over the design, development, integration, and test teams for machine intelligence systems; both internal and external to MDA
- Serve as a primary MDA representative engaging customers, responding to requests for information (RFIs), and preparing for and responding to requests for proposals (RFPs)
- Perform cost-benefit analyses to determine whether system requirements are best met by operator, software, or hardware functions.
- Determine multiple design alternatives, assessing each based upon all identified constraints (cost, schedule, complexity, volume, power, safety, mass, usability, reliability, reusability, maintainability, availability) and select the most suitable options for further design.
- Conduct system and subsystem level design trade-offs to optimize design by partitioning large systems into (successive layers of) subsystems and components.
- Formulate and recommend alternative plans for the mitigation of project issues/risks.
- Develop and disseminate processes and technology improvements that will significantly reduce either cost and/or schedule.

- Lead internal team reviews, reviews of vendors and suppliers, and formal reviews with the customer
- Ensure the machine intelligence program accomplishes its goals within cost while meeting its schedule milestones.
- Develop and mentor a group of Machine Intelligence / Machine Learning engineers.
- Provide oversight across a variety of programs using metrics (such as technical performance measures & Program Management Control System (PMCS)) to identify issue/risks and the impact to project cost & schedule.

**Qualifications and Experience:**

Interested candidates must possess a Master's degree in Computer Science, Aerospace, Mechanical, Electrical Engineering or Physics/Applied Mathematics. Candidate should have 6 years of hands on experience in AI/ML development or related fields.

PHD is an asset

The candidate must have demonstrated the ability to work in a team environment. Excellent communication skills a must.

All candidates must be able to obtain CGP and ITAR clearance

**PRE-EVENT VIDEO INTRODUCTION QUESTIONS:**

- 1) Please tell me about yourself.
- 2) What makes you the best choice for this position?
- 3) Tell me about a specific time when those with whom you were working could not agree upon the course of action. How did you approach the situation?

**If you meet the requirements and your skills are a good match, then proceed to register and pay for your video processing fee.**

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