



Online Adaptive Control Solution Using Integral Reinforced Learning

UTA (11-40)

Technology Need:

Car accidents and hazards related to operating heavy machinery cost billions to the exchequer; road accidents alone cost \$518 billion globally. Automation is the answer to this inefficiency. Various business sectors have already invested large sums to use automation in their products and product development cycles. These automation systems require optimal control policies. Yet, conventional control policies are implemented with complex circuit designs, which result in reliability issues, and require extensive system knowledge that hinders its ability to make quick decisions.

Solution/ Offering:

Researchers at UTA have developed a novel approach to increase reliability and efficiency of the controller. It does not require complete system information and manages system optimization while gather knowledge of the system, enabling smooth output. The controller's circuit design has been simplified, increasing its robustness, and proven operationally stable.



Value Proposition:

- ✓ Reliable and robust controller
- ✓ Controller simultaneously tunes *actor* and *critic* networks
- ✓ Simplified circuit design decreases production costs

Industrial application:

- ✓ Automotive, Aerospace, Robotics
- ✓ Factory automation, R&D departments, Process and Logistics control

Patent Status:

- ✓ Patent Pending

Current Stage:

- ✓ Prototype Tested

About OTM



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