Transfer Assurance for Machine Learning in Autonomous Systems

Picardi C., Hawkins R., Paterson C., Habli I.
Background and Motivations

- Developed methodology for Assurance of Machine Learning for use in Autonomous Systems (AMLAS) prior to deployment.
- If retraining model is needed we start assurance from scratch.

Not ideal in dynamic and complex environment.
AMLAS Process
Transfer Assurance
Conclusion and further work

• ML components will require update during operation
• Currently providing assurance after changes is costly and time consuming
• We have proposed a process to simultaneously update the ML model and its assurance to reduce time and cost
• Further work required to develop:
  • Effective monitoring strategies for ML components
  • Techniques for incremental ML development
  • Approaches for assessing impact of changes on assurance
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