



WRPS Chief Technology Office Internship Recap

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**DOE-FIU Science and Technology Workforce Development Program
Applied Research Center
Florida International University**

FLORIDA INTERNATIONAL UNIVERSITY





Robotics Development Internship Scope



- Support semi-automated and automated robotic system development
- Develop automated experimental workflows to enhance safety and efficiency
- Run continuous testing to validate and qualify automated systems
- Assist in daily CTO work involving robotics and robotic testing procedures
- Increase worker safety and efficiency within the Hanford Mission



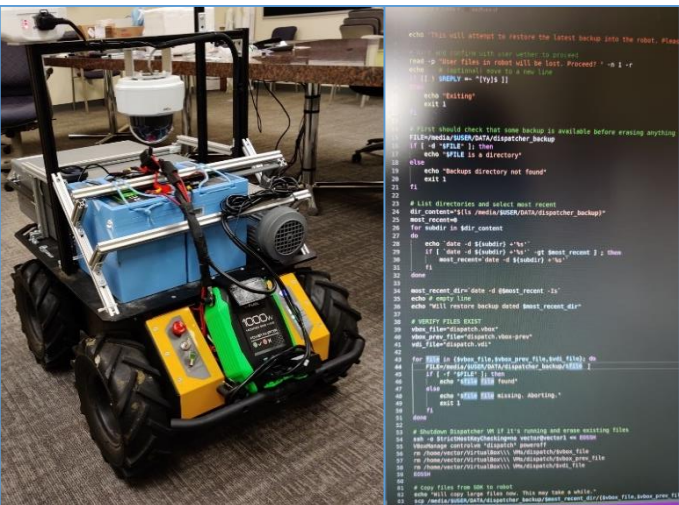
washington **river**
protection *solutions*
an **amentum**-led company



Support CTO Robotics Work



- Prepare equipment for integration into future testing
- Maintain, repair, and script recoveries for platforms
- Design and prototype parts for integration of equipment onto platforms
- Continuously test and validate automated systems and routines





Method for Validating Automated Systems



- For Waypoint Robotics Vector autonomous navigation:



Locate an area and develop testing course



Determine method to check data quality



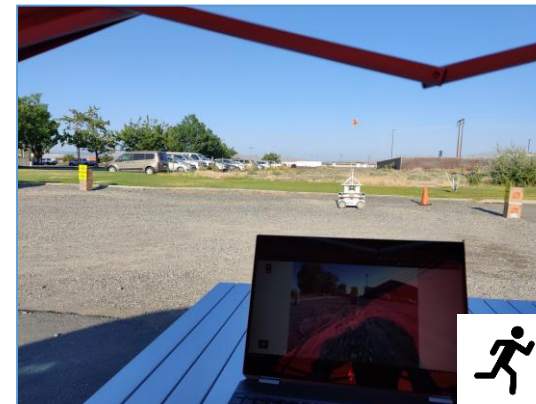
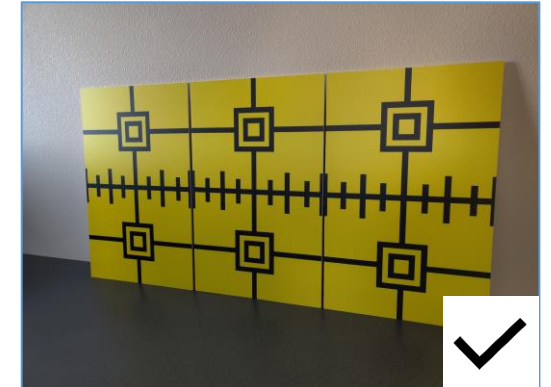
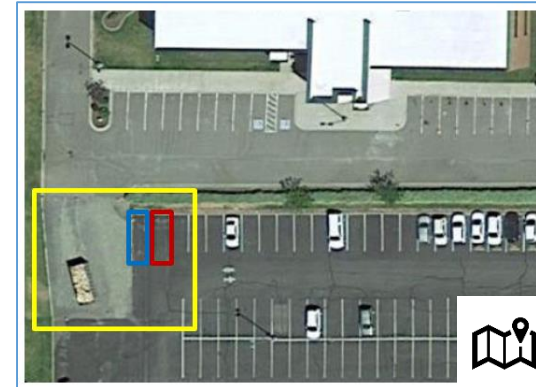
Run Vector platform continuously on course



Analyze data gathered from test sessions

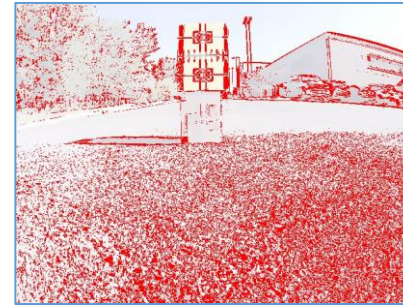


Develop report on lessons learned from testing





An Insight Into Data Analysis



- Images gathered through hours of testing are processed through software
- Pixel-by-pixel comparison to qualify observations made in final stopping position
- Less red in the resulting image means the Vector stops in the same spot each time





Gained Experience

- Insight into difference between consumer-application vs development-application of robotic systems
- Methods to maintain work fluidity and efficiency while teleworking
- Design and execution of quality testing methods for autonomous routines
- Bash scripting for recovery operations on robotic platforms





Plans for the Future

- Continue supporting WRPS CTO work
- Conclude and report findings from Vector navigation testing
- Incorporate additional technologies onto robotic platforms
- Continue M.S. thesis track for Mechanical Engineering at FIU
- Make connections with new people and work through more experiences





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