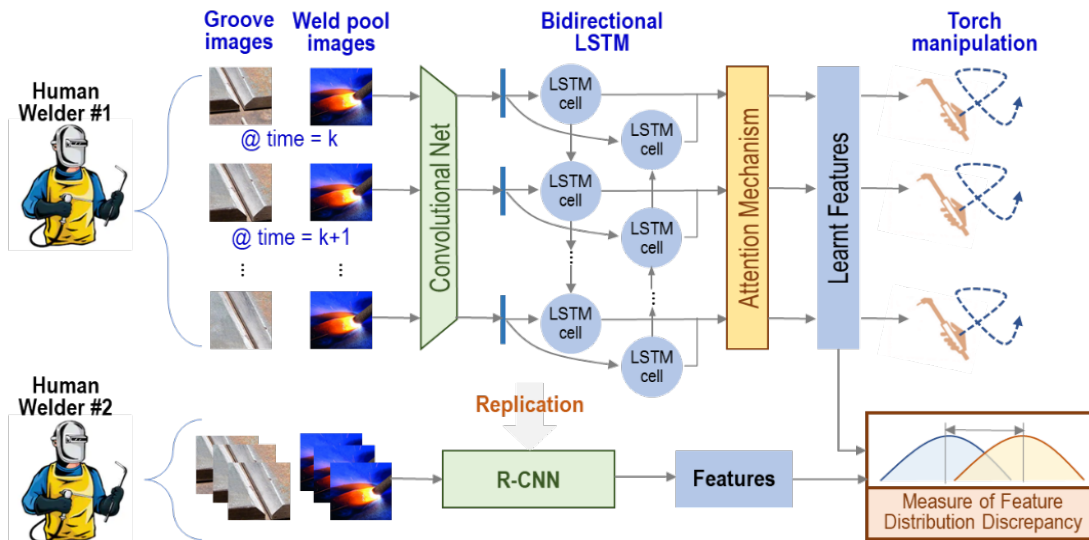
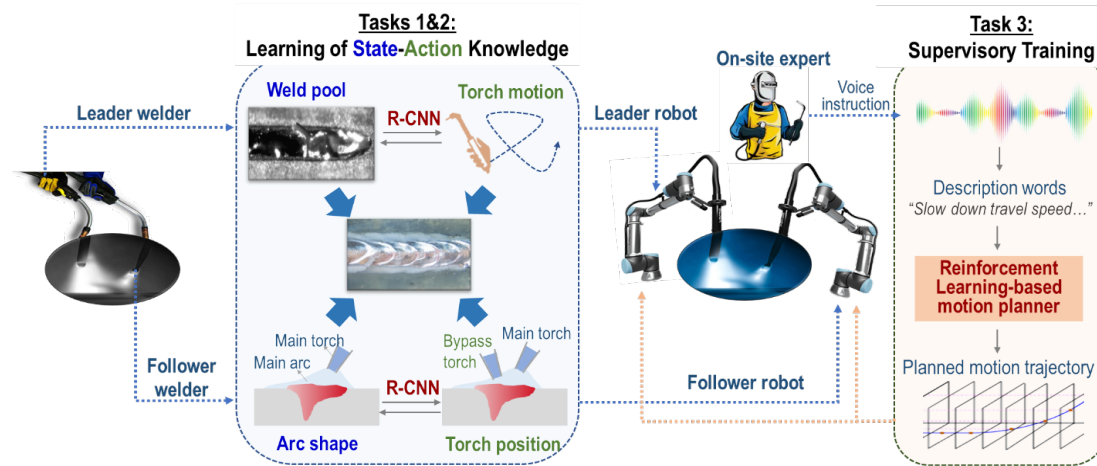
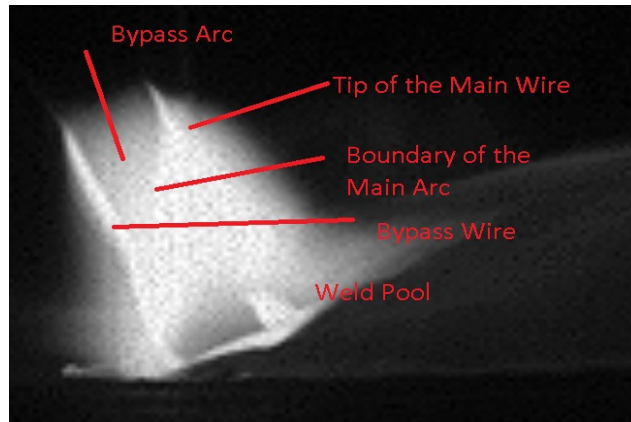


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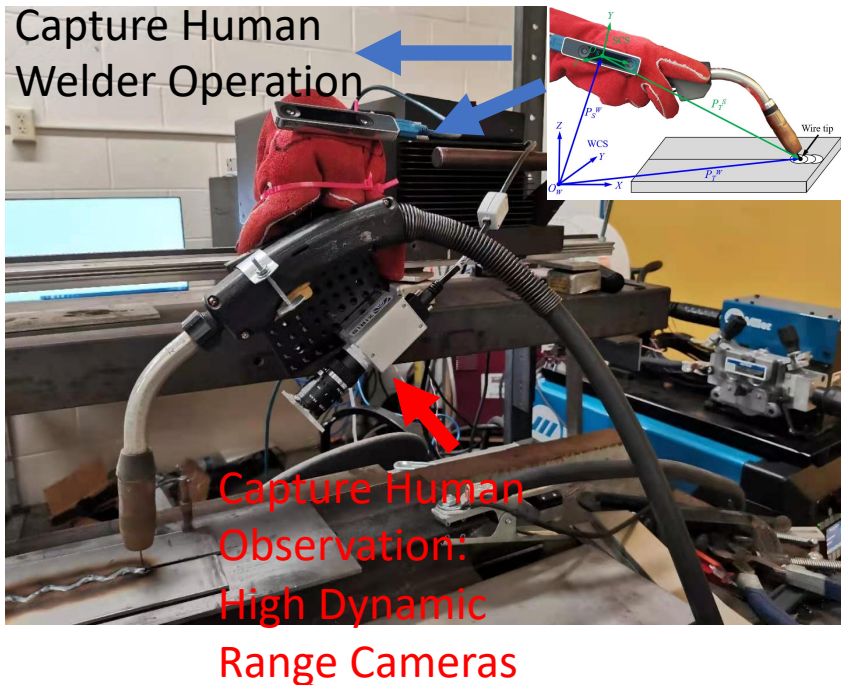


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August 1, 2020 July 31, 2023
 YuMing Zhang (PI) and Peng Wang (Co-PI), University of Kentucky
 2021 NRI & FRR Principal Investigators' Meeting, March 10-12, 2021



- Complex process: significant benefits, complex, do not know how to operate effectively
- Knowledge/Intelligence for effective operation: time consuming to learn by conventional approaches
- Human welders: quick learners
- Learning human adaptation/intelligence through their operation and process data
- Conditions for humans to freely demonstrate and capture their demonstration data
- Deep learning models and then program the robots



- Purchased two high dynamic range cameras needed and captured images from exercise experiments
- Captured human operation data during exercise experiments
- Prepared draft machine learning program to learn human reaction dynamics
- Conducted experiments to generate data to learn welding process dynamics and can use the data for machine learning modeling exercises

