

Time-resolved optical process control for concrete 3D printing to prevent plastic failure

Task

Implement an optical monitoring system (involving a RGB-D camera or other depth sensing equipment) that can monitor an object during its manufacturing process and compare the measured data to “as-planned” data and to previous states in time. The system should be able to adjust parameters accordingly.

- Get to know the technical equipment (RGB-D camera, UR10e robot).
- Get familiar with extrusion 3D concrete printing and the related robot control (URscript or ROS).
- Implement referencing methods to compare measured data with “as-planned” information as well as data of previous states.
- Test the implementation with a clay extrusion robot using different clay “mixtures” and printing speeds.

Project Characteristics

