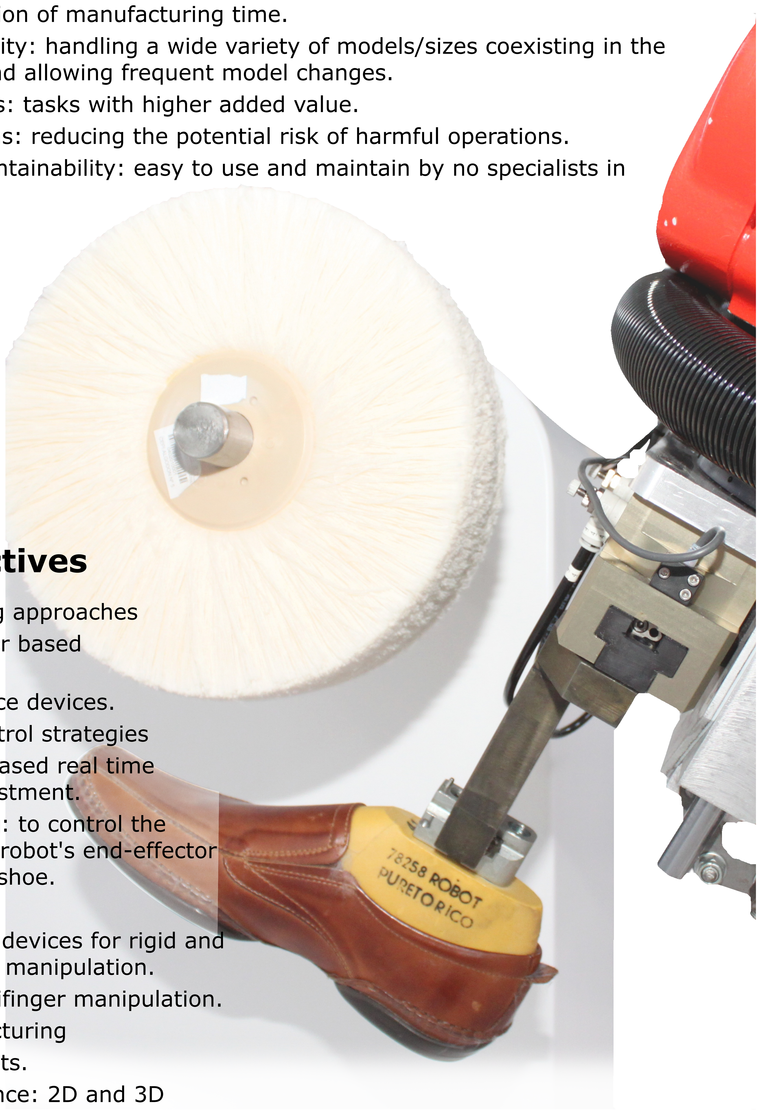
ROBOFOOT

Smart robotics for high added value footwear industry

Industrial requirements

- Quality: to reduce the retouching operations at the end of the line.
- Impact in current production process: coexistence of manual operations with robotized.
- Efficiency: reduction of manufacturing time.
- Production flexibility: handling a wide variety of models/sizes coexisting in the production line and allowing frequent model changes.
- Reduction of costs: tasks with higher added value.
- Working conditions: reducing the potential risk of harmful operations.
- Usability and maintainability: easy to use and maintain by no specialists in robottics.



Scientific objectives

- New programming approaches
  - CAD and sensor based programming.
  - Manual guidance devices.
- Sensor based control strategies
  - Force control based real time trajectory adjustment.
  - Visual servoing: to control the position of the robot's end-effector relative to the shoe.
- Manipulation
  - Strategies and devices for rigid and non-rigid parts manipulation.
  - Bimanual-multifinger manipulation.
- Footwear Manufacturing
  - Redesign of lasts.
  - Quality assurance: 2D and 3D defects.
  - Different manufacturing operations: roughing, gluing, inking, polishing, last removal, last manufacturing.
  - Packaging.

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