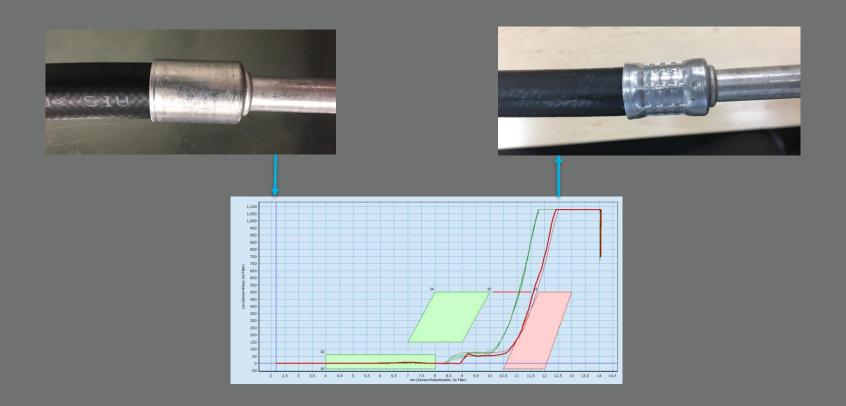# Bend All Automotive
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- Tier 1 Automotive Supplier in Transmission and Engine Oil Cooler Line Assemblies
- 700 employees in Ayr, ON.
- Established in 1976
- Technical center of excellence for tube cold forming, bending and hose crimping.
- Crimp tubes to hose ~17,000 times daily. End forming ~150,000 times daily.

- Bend All's vision for Advanced Manufacturing in our facility:
- Utilize data collected from smart tools, analyze the data with AI techniques for quality and predictive maintenance, and encode the data to the part to provide superior part quality, process quality, and traceability.

- Bend All collects a large amount of data on their critical forming/crimping processes to ensure quality. (via Strain vs. Displacement sensors in the tooling)

- The data being collected is used to determine if a part is formed as intended but it is not being utilized to its full potential.

- The project idea is to implement AI Algorithms to analyze the data to provide a better understanding of the forming/crimping process, quality characteristics and maintenance of the machines and tooling.

- Further, the parts can then be encoded with the relevant quality/manufacturing data, via smart labels, as they are being manufactured to provide full tractability of the part from factory to the end of the products life.

- We would like to partner with experts in Data Analysis using AI technology to help analyze the mass amounts of data being collected.
  - An organization with experience developing and training an AI to determine part quality in a manufacturing environment

- Experts in Smart Labeling in a manufacturing environment
  - Cost effective solutions for read/write smart labels which can withstand automotive environments

- Strain Sensor experts for tool integration
  - Strain sensors which can be easily implemented into tooling, sensitive enough to detect subtle defects in manufacturing