



### 3D THERMAL IMAGING SYSTEM AND ALGORITHM

ID# 2024-062

## HIGHLIGHTS

- Innovative method to acquire 3D thermal images
- Integration of the vision systems and corresponding algorithms
- AI-driven computing engine for point space correspondence of different resolution data

## OPPORTUNITY

The University of Alberta inventors have developed a vision system capable of providing 3D images in terms of point cloud with corresponding temperature information and machine vision application, providing a multi-dimensional point space and thermal data.

The vision system can provide a series of images with each point having an x,y,z coordinate, a corresponding temperature reading of the x,y,z coordinate, and an associated vision spectrum pixel information to provide a multidimensional point-based plot of temperature texture and position.

The 3D thermal images have various applications, including rover navigation, industrial plant monitoring, rescue robots, and additive manufacturing.

## COMPETITIVE ADVANTAGE

- No need to do the calibration for each of the new objects
- Create position-aware data for mechanical property and geometry mapping
- Generates a digital shadow of each layer of the fabricated part

## STATUS

- Filed Provisional Patent

## INVENTOR

- [Ahmed Qureshi](#), [Mohammad Keshmiri](#), and Shirin Dehgahi



# UNIVERSITY OF ALBERTA TECHNOLOGY TRANSFER SERVICES

## MORE INFORMATION

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