

## CIS PA 2

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### Summary

This report is for programming assignment 2 distortion calibration and application, containing following parts,

- \* Mathematical Approach and Algorithm
- \* Programming Structure
- \* Validation and Results
- \* Discussion
- \* Summary of Unknown Data

The folder contains following subfolders and Matlab files,

- \* PA2 - Essential Matlab functions
  - scale\_to\_box.m: scale the experimental distorted data and return its maximum and minimum value
  - BernsteinMat.m: return the Bernstein matrix of scaled points set
  - distortion\_matrix\_compute.m: compute the distortion matrix
  - distortion\_correct.m: correct the measured distorted data by distortion matrix
  - correct\_em\_pivot\_calibration.m: corrected version of EM pivot calibration
  - fiducials\_in\_EM.m: compute the locations of the fiducial points relative to the tracker base frame.
- \* PA12-StudentData - Data for PA2
- \* parse - Matlab functions for parsing data files
- \* pa2output - Output data derived by PA2
- \* pa2driver.m - driver script for PA2 and leads to pa2output files
- \* pa2validation.m - Matlab script for validation and error analysis