CIS580 Problem Set 4

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Contents

1 Mapping 2D points

1.1 Use solution for orthogonal Procrustes problem to obtain rotation matrix

1.2 Find solution that solves directly for the rotation angle θ and translation $[T_x, T_Y]$

2 Phone held vertically

2.1 Write projection equations

2.2 Solve equations for yaw angle θ and translations $[T_x, T_y, T_z]$

2.3 Conditions on camera position to obtain unique or finite number of solutions

3 Decompose H into rotation R and translation T