

Homework #5 Report

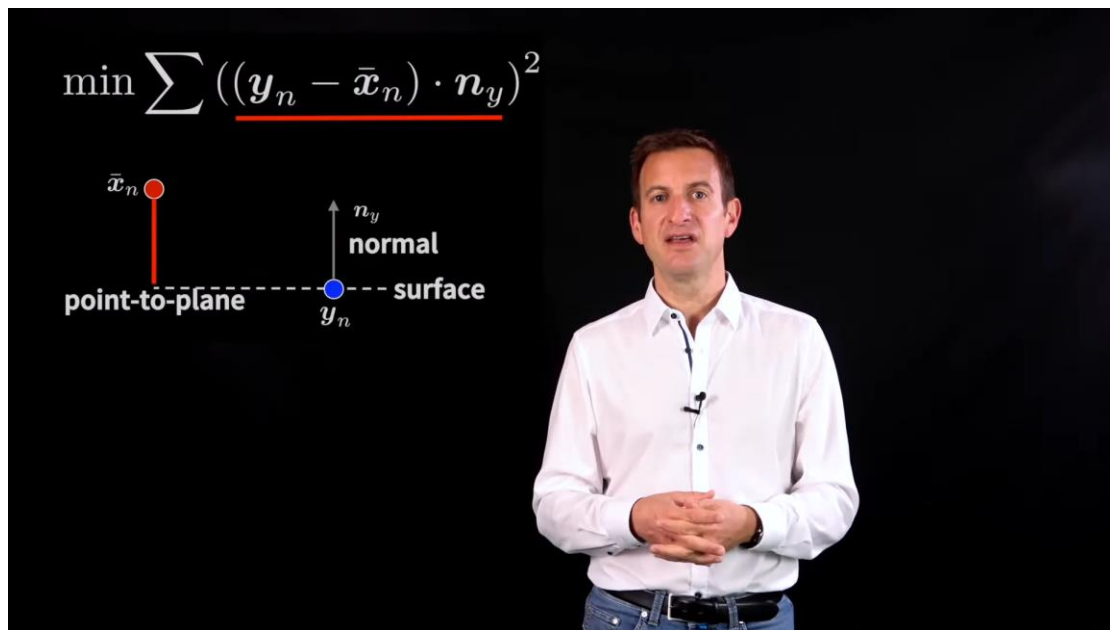
[EECN30168] Self-Driving Cars 2022

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Video Name: Point-Plane and Generalized ICP – 5 Minutes with Cyrill



Video Link: <https://www.youtube.com/watch?v=2hC9IG6MFD0>

Introduction:

This video is basically an extension of the video “Iterative Closest Point (ICP) – 5 Minutes with Cyrill”. In this video, Cyrill explained that point-to-plane ICP basically changes the cost function of the point-to-point ICP. Different from point-to-point ICP, we project the point-to-point error vector onto the surface normal. Besides, Cyrill also made a brief explanation on the Generalized ICP. Cyrill stated that the GICP combines the point-to-point metric, the point-to-plane metric and the plane-to-plane metric. Cyrill explained the complex algorithm and the differences between different ICP variants in his video, and made them a lot easier to understand.