주간보고서

주어진 타겟 카트 절대 자세 배열 사이의 거리가 d-max 이상일 때 클래스 작성

김수민

이번 주의 과제 : linear interpolation 함수 작성 및 전체 경로계획을 위한 Class : Pathplan 클래스 설계, linear interpolation, dubins interpolation 함수 구동 확인

다음 주의 과제: Class: Pathplan 소스 코드 작성

DUBINS: MATLAB에서 출력한 점들이 실제 경로 상들의 점인지 확인

입력 : [처음 포인트의 x,y,theta], [나중 포인트의 x,y,theta], 원의 반지

[0.0, 0.0, 0.0] [4.0, 4.0, 3.0] 1.0

ros 구동 함수 출력

[ INFO] [1547624236.294047140]: 0.000000, 0.000000, 0.000000, 0.000000

[ INFO] [1547624236.294140865]: 0.099833, 0.004996, 0.100000, 0.100000

[ INFO] [1547624236.294246994]: 0.198669, 0.019933, 0.200000, 0.200000

[ INFO] [1547624236.294331318]: 0.295520, 0.044664, 0.300000, 0.300000

[ INFO] [1547624236.294402090]: 0.389418, 0.078939, 0.400000, 0.400000

[ INFO] [1547624236.294492955]: 0.479517, 0.122244, 0.480211, 0.500000

[ INFO] [1547624236.294557683]: 0.568207, 0.168441, 0.480211, 0.600000

[ INFO] [1547624236.294644124]: 0.656897, 0.214638, 0.480211, 0.700000

[ INFO] [1547624236.294928711]: 0.745586, 0.260834, 0.480211, 0.800000

[ INFO] [1547624236.295018548]: 0.834276, 0.307031, 0.480211, 0.900000

[ INFO] [1547624236.295077701]: 0.922966, 0.353227, 0.480211, 1.000000

[ INFO] [1547624236.295150565]: 1.011656, 0.399424, 0.480211, 1.100000

[ INFO] [1547624236.295196055]: 1.100346, 0.445621, 0.480211, 1.200000

[ INFO] [1547624236.295256645]: 1.189035, 0.491817, 0.480211, 1.300000

[ INFO] [1547624236.295330594]: 1.277725, 0.538014, 0.480211, 1.400000

[ INFO] [1547624236.295380064]: 1.366415, 0.584210, 0.480211, 1.500000

[ INFO] [1547624236.295422004]: 1.455105, 0.630407, 0.480211, 1.600000

[ INFO] [1547624236.295466516]: 1.543794, 0.676603, 0.480211, 1.700000

[ INFO] [1547624236.295535224]: 1.632484, 0.722800, 0.480211, 1.800000

[ INFO] [1547624236.295639184]: 1.721174, 0.768997, 0.480211, 1.900000

[ INFO] [1547624236.295706174]: 1.809864, 0.815193, 0.480211, 2.000000

[ INFO] [1547624236.295771926]: 1.898553, 0.861390, 0.480211, 2.100000

[ INFO] [1547624236.295834602]: 1.987243, 0.907586, 0.480211, 2.200000

[ INFO] [1547624236.295898918]: 2.075933, 0.953783, 0.480211, 2.300000

[ INFO] [1547624236.295974466]: 2.164623, 0.999980, 0.480211, 2.400000

[ INFO] [1547624236.296024235]: 2.253313, 1.046176, 0.480211, 2.500000

[ INFO] [1547624236.296068771]: 2.342002, 1.092373, 0.480211, 2.600000

[ INFO] [1547624236.296158332]: 2.430692, 1.138569, 0.480211, 2.700000

[ INFO] [1547624236.296233207]: 2.519382, 1.184766, 0.480211, 2.800000

[ INFO] [1547624236.296285436]: 2.608072, 1.230963, 0.480211, 2.900000

[ INFO] [1547624236.296348432]: 2.696761, 1.277159, 0.480211, 3.000000

[ INFO] [1547624236.296404603]: 2.785451, 1.323356, 0.480211, 3.100000

[ INFO] [1547624236.296474347]: 2.874141, 1.369552, 0.480211, 3.200000

[ INFO] [1547624236.296537334]: 2.962831, 1.415749, 0.480211, 3.300000

[ INFO] [1547624236.296636855]: 3.051520, 1.461946, 0.480211, 3.400000

[ INFO] [1547624236.296707211]: 3.140210, 1.508142, 0.480211, 3.500000

[ INFO] [1547624236.296772749]: 3.228900, 1.554339, 0.480211, 3.600000

[ INFO] [1547624236.296834113]: 3.317590, 1.600535, 0.480211, 3.700000

[ INFO] [1547624236.296909966]: 3.406279, 1.646732, 0.480211, 3.800000

[ INFO] [1547624236.296977640]: 3.494969, 1.692928, 0.480211, 3.900000

[ INFO] [1547624236.297044519]: 3.583659, 1.739125, 0.480211, 4.000000

[ INFO] [1547624236.297111551]: 3.672349, 1.785322, 0.480211, 4.100000

[ INFO] [1547624236.297180413]: 3.761039, 1.831518, 0.480211, 4.200000

[ INFO] [1547624236.297246049]: 3.849728, 1.877715, 0.480211, 4.300000

[ INFO] [1547624236.297310799]: 3.938418, 1.923911, 0.480211, 4.400000

[ INFO] [1547624236.297371364]: 4.027108, 1.970108, 0.480211, 4.500000

[ INFO] [1547624236.297420061]: 4.115798, 2.016305, 0.480211, 4.600000

[ INFO] [1547624236.297464464]: 4.204487, 2.062501, 0.480211, 4.700000

[ INFO] [1547624236.297509775]: 4.293177, 2.108698, 0.480211, 4.800000

[ INFO] [1547624236.297556312]: 4.380726, 2.156968, 0.549013, 4.900000

[ INFO] [1547624236.297598686]: 4.463281, 2.213327, 0.649013, 5.000000

[ INFO] [1547624236.297640551]: 4.539796, 2.277646, 0.749013, 5.100000

[ INFO] [1547624236.297702338]: 4.609509, 2.349283, 0.849013, 5.200000

[ INFO] [1547624236.297753023]: 4.671721, 2.427522, 0.949013, 5.300000

[ INFO] [1547624236.297795827]: 4.725812, 2.511581, 1.049013, 5.400000

[ INFO] [1547624236.297838439]: 4.771240, 2.600620, 1.149013, 5.500000

[ INFO] [1547624236.297881825]: 4.807553, 2.693749, 1.249013, 5.600000

[ INFO] [1547624236.297924659]: 4.834387, 2.790038, 1.349013, 5.700000

[ INFO] [1547624236.297968489]: 4.851474, 2.888525, 1.449013, 5.800000

[ INFO] [1547624236.298046293]: 4.858643, 2.988226, 1.549013, 5.900000

[ INFO] [1547624236.298093165]: 4.855823, 3.088145, 1.649013, 6.000000

[ INFO] [1547624236.298137358]: 4.843041, 3.187283, 1.749013, 6.100000

[ INFO] [1547624236.298181046]: 4.820427, 3.284649, 1.849013, 6.200000

[ INFO] [1547624236.298224870]: 4.788204, 3.379272, 1.949013, 6.300000

[ INFO] [1547624236.298266565]: 4.746697, 3.470204, 2.049013, 6.400000

[ INFO] [1547624236.298310185]: 4.696318, 3.556539, 2.149013, 6.500000

[ INFO] [1547624236.298351796]: 4.637573, 3.637413, 2.249013, 6.600000

[ INFO] [1547624236.298394986]: 4.571046, 3.712018, 2.349013, 6.700000

[ INFO] [1547624236.298459419]: 4.497404, 3.779609, 2.449013, 6.800000

[ INFO] [1547624236.298505252]: 4.417382, 3.839510, 2.549013, 6.900000

[ INFO] [1547624236.298553238]: 4.331780, 3.891124, 2.649013, 7.000000

[ INFO] [1547624236.298617651]: 4.241453, 3.933933, 2.749013, 7.100000

[ INFO] [1547624236.298664396]: 4.147303, 3.967511, 2.849013, 7.200000

[ INFO] [1547624236.298709111]: 4.050271, 3.991521, 2.949013, 7.300000



과도한 수작업인 관계로 첫부분과 끝부분만 일치하는지 확인해보았습니다.

4. 한계점

[geometry\_msgs/Point](http://docs.ros.org/lunar/api/geometry_msgs/html/msg/Point.html) position

float64 x  
float64 y  
float64 z  
[geometry\_msgs/Quaternion](http://docs.ros.org/lunar/api/geometry_msgs/html/msg/Quaternion.html) orientation

float64 x  
float64 y  
float64 z  
float64 w

이러한 형태의 개수만을 맞춘 메시지 형식을 이용했기 때문에 다른 노드에 적용하기에는 부적절할 수 있다.

LINEAR:

입력 : ‘[2.0, 0.0, 0.0]’ ‘[0.0, 0.0, 120,5]’

[ INFO] [1548336471.122280540]: 2.000000, 0.000000, 0.000000, 0.000000

[ INFO] [1548336471.122425660]: 1.900000, 0.000000, 6.000000, 0.100000

[ INFO] [1548336471.122563691]: 1.800000, 0.000000, 12.000000, 0.200000

[ INFO] [1548336471.122654472]: 1.700000, 0.000000, 18.000000, 0.300000

[ INFO] [1548336471.122697846]: 1.600000, 0.000000, 24.000000, 0.400000

[ INFO] [1548336471.122736015]: 1.500000, 0.000000, 30.000000, 0.500000

[ INFO] [1548336471.122771319]: 1.400000, 0.000000, 36.000000, 0.600000

[ INFO] [1548336471.122877924]: 1.300000, 0.000000, 42.000000, 0.700000

[ INFO] [1548336471.122929464]: 1.200000, 0.000000, 48.000000, 0.800000

[ INFO] [1548336471.122985931]: 1.100000, 0.000000, 54.000000, 0.900000

[ INFO] [1548336471.123056022]: 1.000000, 0.000000, 60.000000, 1.000000

[ INFO] [1548336471.123101107]: 0.900000, 0.000000, 66.000000, 1.100000

[ INFO] [1548336471.123143008]: 0.800000, 0.000000, 72.000000, 1.200000

[ INFO] [1548336471.123221331]: 0.700000, 0.000000, 78.000000, 1.300000

[ INFO] [1548336471.123263348]: 0.600000, 0.000000, 84.000000, 1.400000

[ INFO] [1548336471.123332491]: 0.500000, 0.000000, 90.000000, 1.500000

[ INFO] [1548336471.123373983]: 0.400000, 0.000000, 96.000000, 1.600000

[ INFO] [1548336471.123415922]: 0.300000, 0.000000, 102.000000, 1.700000

[ INFO] [1548336471.123457713]: 0.200000, 0.000000, 108.000000, 1.800000

[ INFO] [1548336471.123504499]: 0.100000, 0.000000, 114.000000, 1.900000

