Please sequentially run ‘ImportPathFile\_1’, ‘RoadModel\_2’,’ CreatePG\_3’,’ RSL\_model\_4’, and ‘MIN\_Opt\_5’ (FIX\_Opt\_5) to optimize RSL placement in a curved tunnel.

**Module explanations**

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| **Modules** | **Roles** | **Notes** |
| ImportPathFile\_1 | Import trajectory data, agent mesh models, and agent point models | ‘tunneltrack.csv’ is the demo trajectory data generated with SUMO |
| RoadModel\_2 | Initialize PG | ‘tunnel\_pt.ply’ and ‘tunnel\_rd.ply’ are 3D models of tunnel and tunnel road surface, respectively. The files can be found in the attached ‘highway tunnel’ folder. |
| CreatePG\_3 | Create probabilistic grids through continuous reconstruction of tunnel scenarios, as described in the paper |  |
| RSL\_model\_4 | Pre-compute the observed PG for each candidate RSL placement plan;  visualize the KL divergence-RSL number curve (sub-modularity of Dkl) | ‘net\_res0\_add1\_sig’ is the trained Model 3 |
| MIN\_Opt\_5/ FIX\_Opt\_5 | Solve the MIN/FIX problem, as described in the main text |  |

A demo of code execution can be found at <https://www.dropbox.com/scl/fi/ym147k0his9dldvmny1m4/source-code-demo.mp4?rlkey=7o3dwweyc2jvw9uabb28i2a4a&e=1&st=m1avdaia&dl=0>