```
[4.0K] asl_gremlin_msgs
    [6.8K]
            CMakeLists.txt
     [4.0K]
            include
       - [4.0K] asl_gremlin_msgs
            msg
    [4.0K]
           36] MotorAngVel.msg
           381
                 MotorPwm.msg
          145]
                 RefTraj.msg
           48]
                VehicleState.msg
   [2.5K]
           package.xml
    [4.0K]
            src
   OK] asl_gremlin_pkg
[6.5K] CMakeLists.txt
[4.0K] config
[4.0K]
      [ 705] rover_parameters.yaml[ 664] topic_names.yaml
    [4.0K] include
        [4.0K] asl_gremlin_pkg
            [1.6K] GetParam.h
           - [1.6K]
                    SubscribeTopic.h
    [4.0K] launch
       · [1.3K]
                 launch_asl_gremlin.launch
      - [ 339]
                 load_params.launch
    [2.3K] package.xml
    [4.0K]
            scripts
      [2.3K] plot_bag_file.py
    [4.0K] src
        [4.0K] asl_gremlin_pkg
          — [ 678] GetParam.cpp
— [ 44] SubscribeTopic.cpp
[4.0K] bash_scripts
       41] APM_arm.sh
       44]
            APM_disarm.sh
      686]
            launch_asl_gremlin.sh
   [1.0K]
            select_feedback.sh
    [ 635]
            set_controller_gains.sh
      614]
            set_waypoints.sh
       84]
           start_sim.sh
      174] stop_sim.sh
[2.0K] CMakeLists.txt
[4.0K]
        controller
    [4.0K] cfg
[ 733] controllerGainSet.cfg
    [7.9K] CMakeLists.txt
    [4.0K]
            include
        [4.0K] controller
           -[6.3K]
                    BackSteppingController.h
          – [ 929]
                     ControllerBase.h
           - [4.0K]
                     controller utilities.h
           - [8.1K]
                     hdg_correct_final_v2.txt
            [1.1K]
                     OmegaToPWM.h
    [4.0K] launch
       [ 636] launch controller.launch
    [2.7K] package.xml
    [4.0K]
            src
        [1.5K]
                 angular_vel_to_pwm_node.cpp
        [2.8K]
                backstepping controller node.cpp
        [2.3K] cmd_pwm_to_arduino_pwm.cpp
[4.0K] controller
           [ 47] BackSteppingController.cpp
                    ControllerBase.cpp
               39]
          [1.8K] OmegaToPWM.cpp
        [4.4K]
                controllerGainSet client.cpp
[1.5K] LICENSE
       README.md
[ 683]
[4.0K]
        state_feedback
    [4.0K] cfg
[797] feedbackSelect.cfg
   [8.3K] CMakeLists.txt
[4.0K] include
        [4.0K] state_feedback
            [1.8K] EncoderDataToOmega.h
            [4.9K]
                     FeedbackSelected.h
            [1.3K]
                     ForwardEuler.h
           - [1.5K]
                     Gps2xy.h
    [4.0K] launch
       [ 955] launch_state_feedback.launch
    [2.8K] package.xml
    [4.0K]
            src
        [2.5K]
                 encoder_data_stamped.cpp
                encoder_data_to_omega.cpp
encoder_to_pose.cpp
        [2.4K]
        [4.8K]
        [1.8K]
                 feedbackSelect client.cpp
        [1.1K]
                 feedback_selected.cpp
        [3.0K]
                 gps_to_pose.cpp
         [4.0K]
                 state_feedback

    [4.0K] EncoderDataToOmega.cpp

               45]
                    FeedbackSelected.cpp
               40] ForwardEuler.cpp
```

```
└─ [2.9K] Gps2xy.cpp
    OK] test_asl_gremlin
[9.3K] CMakeLists.txt
[4.0K]
     [4.0K] include
        [4.0K] test asl gremlin
    [4.0K] launch
          601]
                 test_controller.launch
           3501
                  test_encoder_to_omega.launch
          355]
                test encoder to pose.launch
    [2.8K] package.xml
    [4.0K]
             src
         [4.0K]
                 cpp_output_data
4K] cmd_ang_vel.dat
             [8.4K]
             [4.1K]
                       cmd pwm.dat
             [6.8K]
                      converted encoder to omega.dat
             [4.0K]
                      plotting
                           left_wheel_angular_vel.pdf
left_wheel_ang_vel_cmd.pdf
                    14K1
                    16K]
                           left wheel pwm cmd.pdf
                           plot_ang_vel.plt
plot_cmd_ang_vel.plt
                    537]
                    5041
                    452]
                           plot_cmd_pwm.plt
                           plot_pose_from_encoder.plt
pose_from_encoder_ticks.pdf
                    245]
                    14K]
                           right_wheel_angular_vel.pdf
right_wheel_ang_vel_cmd.pdf
                    14K]
                    16K1
                    15K1
                           right_wheel_pwm_cmd.pdf
                  0] pose_from_encoder.txt
           - [9.7K] reference_traj.dat
                 matlab_data
         [4.0K]
               19K1
                      actual_state.txt
               19K]
                       cmd_ang_vel_matlab.txt
               19K]
                       cmd pwm matlab.txt
                       compass_hdg_data.txt
             [7.8K]
                      compass_hdg_ENU.txt
encoder_data.txt
               12K1
               40K1
                17K]
                       omega_from_encoder.txt
                19K]
                      pose encoder.txt
             [ 54K]
                      reference trajectory.txt
         [1.2K]
                  test_ang_vel_to_pwm.cpp
         [2.3K]
                  test_controller.cpp
                  test_encoder_to_omega.cpp
test_encoder_to_pose.cpp
test_forward_euler.cpp
         [1.6K]
         [4.0K]
         [1.5K]
         [2.4K]
                  \texttt{test\_polynomial\_evaluation.cpp}
         [1.5K]
                  test_prvt_namespace.cpp
         [ 994]
                  test_publish_compass_hdg.cpp
                  test_publish_encoder_ticks.cpp
test_publish_feedback_selected.cpp
         [1.8K]
         [1.4K]
                  test_publish_ref_traj.cpp
         [1.3K]
         [ 779]
                  test_SubscribeTopic.cpp
[4.0K]
        trajectory_generation
       .0K] cfg
- [ 518] waypointSet.cfg
    [4.0K]
    [7.6K]
             CMakeLists.txt
     [4.0K]
             include
         [4.0K] trajectory_generation
             [1.1K]
                      DistanceToWaypoint.h
                      EvaluatePolynomial.h
             [1.7K]
                      MinimumJerk Trajectory.h
             [4.8K]
             [1.0K]
                      TrajectoryBase.h
             [ 654]
                      trajectory_publisher.h
             [1.4K]
                      WaypointSubscribe.h
    [4.0K]
             launch
        [ 267] launch_trajectory_generation.launch
    [2.7K] package.xml
     [4.0K]
             src
         [4.0K] trajectory_generation
           [1.8K] DistanceToWaypoint.cpp
                571
                      MinimumJerkTrajectory.cpp
                 50]
                      TrajectoryBase.cpp
             [ 606]
                      trajectory publisher.cpp
             [2.6K]
                      WaypointSubscribe.cpp
         [3.6K] trajectory_generator_node.cpp
         [2.8K] waypointSet_client.cpp
    0]
        tree_view.html
 26K]
        tree view.pdf
  .0K] utility_pkg
- [6.8K] CMakeLists.txt
[4.0K]
    [4.0K] include
         [4.0K] utility_pkg
             [1.0K]
                      CmdArgParser.h
             [2.0K]
                       custom_algorithms.h
                       custom type traits.h
             [ 940]
             [1.9K]
                       str_manip.h
             [2.3K]
                       tinyexpr.h
             [ 634]
                      utilities.h
             [6.9K]
                      vector_arithmetic.h
    [2.2K] package.xml
     [4.0K]
             src
       - [4.0K] utility_pkg
```

[2.2K] CmdArgParser.cpp
[ 43] custom\_algorithms.cpp
[ 35] str\_manip.cpp
[ 20K] tinyexpr.c
[ 1.0K] utilities.cpp

48 directories, 137 files