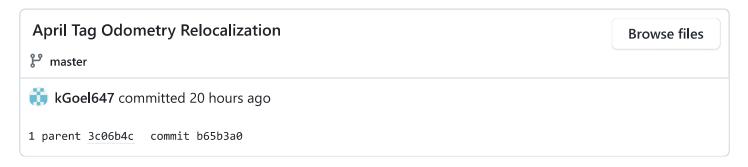


Commit



Showing 2 changed files with 58 additions and 0 deletions.

Whitespace Ignore whitespace Split Unified

```
46 src/y2024/cpp/subsystems/drivetrain.cc
          readings.pose.bearing =
                                                      185
185
                                                                readings.pose.bearing =
        units::degree_t(gyro_.GetYaw()) +
                                                              units::degree_t(gyro_.GetYaw()) +
        bearing_offset_;
                                                              bearing_offset_;
          readings.angular_velocity =
                                                                readings.angular_velocity =
186
                                                      186
        units::degrees_per_second_t(gyro_.GetRate(
                                                              units::degrees_per_second_t(gyro_.GetRate(
        ));
                                                              ));
187
                                                      187
                                                      188
                                                                // April Tag Information Receiving
                                                                units::second t
                                                      189
                                                              receivedAprilTagFrameTime =
                                                              units::second_t(
                                                      190
                                                                    aprilTag_table-
                                                              >GetEntry("aprilTagFrameTime").GetDouble(-
                                                              1.0));
                                                      191
                                                              if (receivedAprilTagFrameTime!=
                                                              aprilTagFrameTime){
                                                                  poseAtFrameCapture=odometry .pose();
                                                      192
                                                      193
                                                              aprilTagFrameTime=receivedAprilTagFrameTim
                                                              e;
                                                                  updatedTagPos=false;
                                                      194
                                                      195
                                                               bool processedFrame = aprilTag_table-
                                                      196
                                                              >GetEntry("processedFrame").GetBoolean(fal
                                                              se);
```

```
197
                                                                frc846::Vector2D<units::foot_t>
                                                               robotPoint;
                                                       198
                                                                 robotPoint.x =
                                                       199
                                                                     units::foot_t(aprilTag_table-
                                                               >GetEntry("robotX").GetDouble(-1.0)) +
                                                       200
                                                                     5.25 in;
                                                                 robotPoint.y =
                                                       201
                                                                     units::foot_t(aprilTag_table-
                                                       202
                                                               >GetEntry("robotY").GetDouble(-1.0)) -
                                                               8_in;
                                                       203
                                                                units::foot_t
                                                               tagDistance=robotPoint.Magnitude();
                                                       204
                                                                 auto aprilTagX =
                                                                     units::foot_t(aprilTag_table-
                                                       205
                                                               >GetEntry("aprilTagX").GetDouble(-1.0));
                                                       206
                                                                 auto aprilTagY =
                                                                     units::foot_t(aprilTag_table-
                                                       207
                                                               >GetEntry("aprilTagY").GetDouble(-1.0));
                                                       208
                                                                 double aprilTagConfidence =
                                                       209
                                                                     aprilTag_table-
                                                               >GetEntry("aprilTagConfidence").GetDouble(
                                                       210
                                                                 auto aprilTagID = aprilTag_table-
                                                               >GetEntry("aprilTagID").GetDouble(-1.0);
                                                       211
                                                                 // April Tag Pose Calculations, etc.
                                                       212
                                                                if (aprilTagConfidence != 0) {
                                                       213
                                                                   robotPoint =
                                                       214
                                                               robotPoint.Rotate(readings.pose.bearing);
                                                       215
                                                                   robotPoint.x = robotPoint.x -
                                                               aprilTagX;
                                                       216
                                                                   robotPoint.y = robotPoint.y -
                                                               aprilTagY;
                                                       217
                                                                 }
                                                       218
                                                       219
          auto pitch_initial =
                                                                 auto pitch_initial =
188
                                                       220
        units::degree_t(gyro_.GetPitch());
                                                               units::degree_t(gyro_.GetPitch());
189
          auto roll initial =
                                                       221
                                                                 auto roll initial =
        units::degree_t(gyro_.GetRoll());
                                                               units::degree_t(gyro_.GetRoll());
190
          auto tilt =
                                                       222
                                                                 auto tilt =
232
                                                       264
233
          readings.velocity = unfiltered velocity;
                                                       265
                                                                 readings.velocity = unfiltered velocity;
234
                                                       266
                                                       267
                                                                 double aprilTagFactor=-1.0;
                                                       268
                                                                 if (!updatedTagPos){
                                                       269
                                                                   units::degree_t angleToTag =
                                                               units::math::atan2(aprilTagY-robotPoint.y,
                                                               aprilTagX-robotPoint.x);
```

```
270
                                                                   aprilTagFactor = aprilTagConfidence *
                                                               confidence factor.value() *
                                                       271
                                                               (readings.velocity.Magnitude()/max_speed_.
                                                               value())) *
                                                      272
                                                               velocity_factor.value() *
                                                               (1/(tagDistance.to<double>
                                                               ()))*distance_factor.value() * (90_deg-
                                                               units::math::abs(readings.pose.bearing-
                                                               angleToTag)).to<double>
                                                               ()*angle_offset_factor.value();
                                                      273
                                                      274
                                                                   frc846::Vector2D<units::foot_t> point;
                                                      275
                                                                   point.x =
                                                               (((poseAtFrameCapture.point.x +
                                                               aprilTagFactor * robotPoint.x) / (1 +
                                                               aprilTagFactor)) +
                                                               odometry_.pose().point.x-
                                                               poseAtFrameCapture.point.x);
                                                      276
                                                                   point.y =
                                                               (((poseAtFrameCapture.point.y +
                                                               aprilTagFactor * robotPoint.y) / (1 +
                                                               aprilTagFactor))+
                                                               odometry_.pose().point.y-
                                                               poseAtFrameCapture.point.y);
                                                                   odometry_.SetPoint(point);
                                                      277
                                                                   updatedTagPos=true;
                                                       278
                                                       279
                                                                 }
                                                       280
235
                                                       281
        pose_x_graph_.Graph(odometry_.pose().point
                                                               pose_x_graph_.Graph(odometry_.pose().point
        .x);
                                                               .x);
236
                                                      282
        pose_y_graph_.Graph(odometry_.pose().point
                                                               pose_y_graph_.Graph(odometry_.pose().point
        .y);
237
                                                      283
                                                               pose_bearing_graph.Graph(odometry_.pose().
        pose bearing graph.Graph(odometry .pose().
        bearing);
                                                               bearing);

y 12 ■■■■ src/y2024/include/subsystems/drivetrain.h □

159
          bool VerifyHardware() override;
                                                      159
                                                                 bool VerifyHardware() override;
                                                      160
160
                                                                private:
161
         private:
                                                      161
                                                                 //April Tag
                                                      162
```

163

164

165

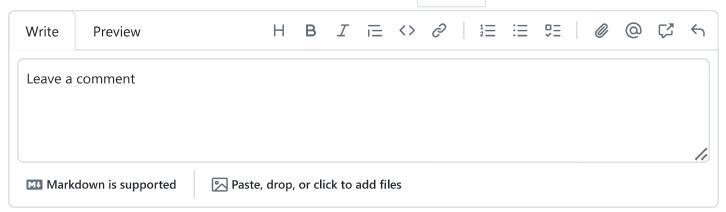
units::second_t aprilTagFrameTime;

bool updatedTagPos=false;

frc846::Position poseAtFrameCapture;

```
166
                                                           + frc846::Loggable
                                                             april_tags_loggable_{*this, "april_tags"};
                                                              frc846::Pref<double>
                                                     167
                                                              confidence_factor{april_tags_loggable_,
                                                              "april_confidence_factor",1.0};
                                                           + frc846::Pref<double>
                                                     168
                                                             velocity_factor{april_tags_loggable_,
                                                              "april_velocity_factor", 1.0};
                                                           + frc846::Pref<double>
                                                     169
                                                             distance_factor{april_tags_loggable_,
                                                              "april_distance_factor", 1.0};
                                                           + frc846::Pref<double>
                                                     170
                                                             angle_offset_factor{april_tags_loggable_,
                                                              "april_angle_factor", 1.0};
                                                     171
                                                     172
                                                                std::shared_ptr<nt::NetworkTable>
                                                             aprilTag_table =
                                                     173
                                                             nt::NetworkTableInstance::GetDefault().Get
                                                             Table("AprilTags");
162
          // Drivetrain dimensions.
                                                     174
                                                               // Drivetrain dimensions.
163
          frc846::Pref<units::inch_t>
                                                     175
                                                               frc846::Pref<units::inch t>
        width_{*this, "width", 21.75_in};
                                                             width_{*this, "width", 21.75_in};
          frc846::Pref<units::inch_t>
                                                     176
                                                               frc846::Pref<units::inch_t>
164
        height_{*this, "height", 26.75_in};
                                                             height_{*this, "height", 26.75_in};
```

0 comments on commit b65b3a0



Comment on this commit