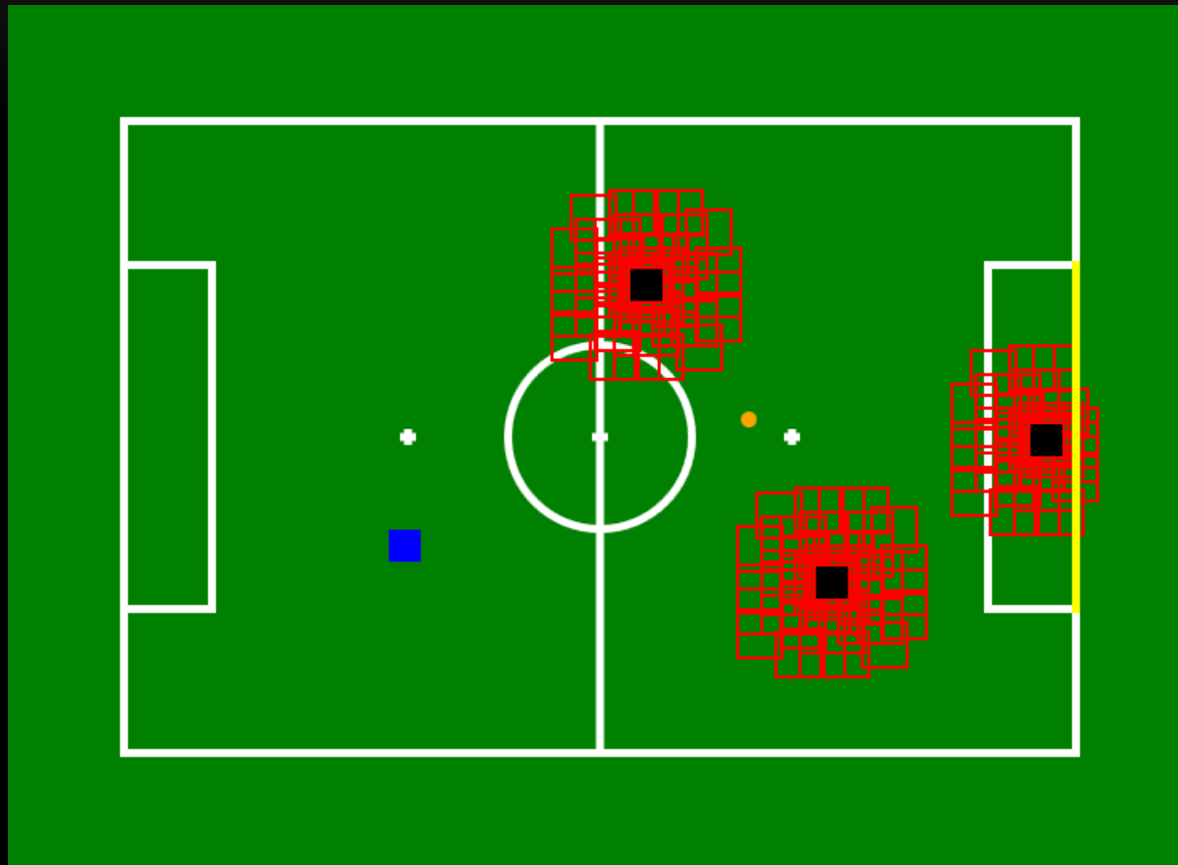# MEREOLOGICAL PATH PLANNER

Łukasz Przytuła
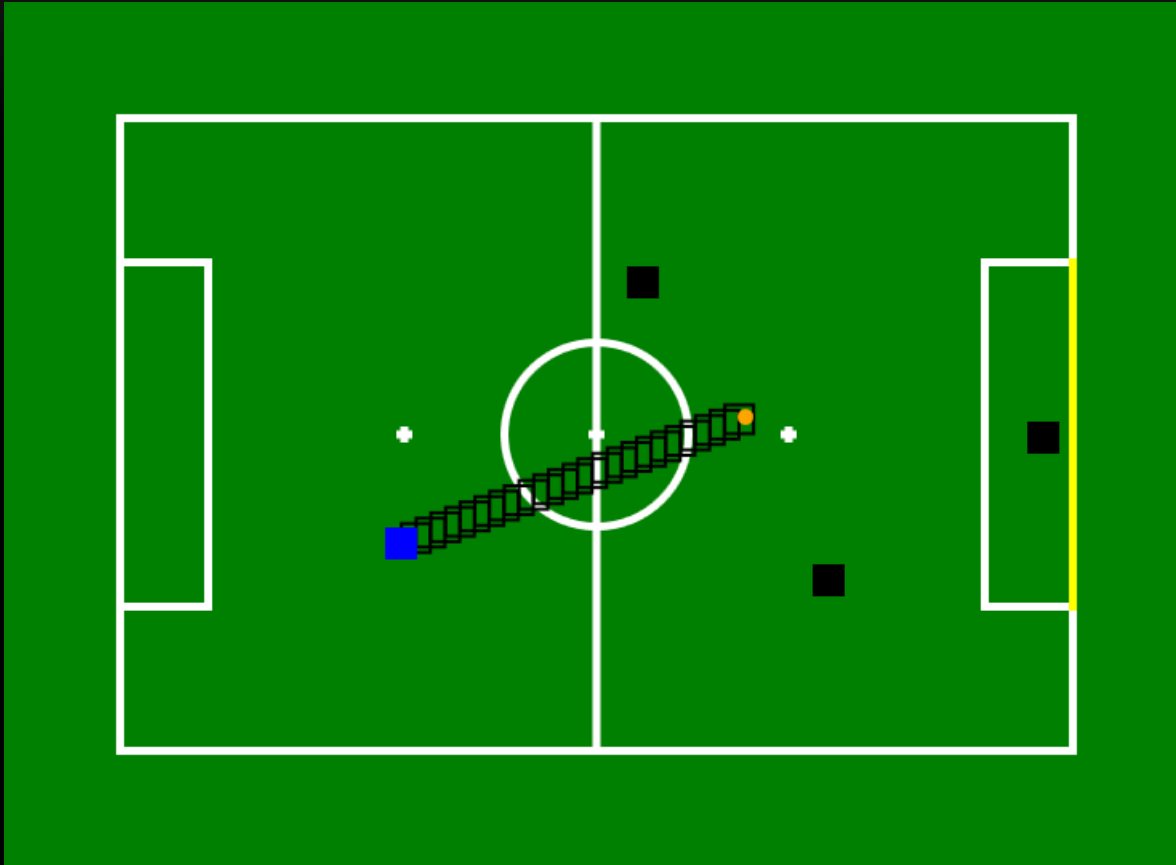
ROUGH MEREOLOGY (FOR 2-D SPACE)

- Rough inclusion: $\mu(X, Y, r) \Longleftrightarrow \frac{|X \cap Y|}{|X|} \geq r, \; r \in [0,1]$

- Distance: $\kappa(X, Y) = \min\{r, s: \mu(X, Y, r), \mu(Y, X, s)\}$

- Nearness: $N(X, Y, Z) \Longleftrightarrow \kappa(X, Y) > \kappa(Y, Z)$

- Betweenness (van Benthem sense):
  $T_B(X, Y, Z) \Longleftrightarrow [\forall_W (X = W) \vee N(X, Y, W) \vee N(X, Z, W)]$

REPULSIVE MEREOLOGICAL POTENTIAL FIELDS

STRAIGHT LINE TO THE DESTINATION

$$0.3 \leq \kappa \leq 0.5$$

BEND LINE AFFECTED BY FIELD(S)