Bivariate Gaussian distribution:

$$f_i(p,t) = \frac{1}{\sqrt{(2\pi)^2 detCOV_i(t)}} exp(-\frac{1}{2}(p - \mu_i(\vec{s}_i(t)))^T COV_i(t)^{-1}(p - \mu_i(t)))$$

Influence degree:

$$I_i(p,t) = \frac{f_i(p,t)}{f_i(p_i(t),t)}$$

V is a matrix whose columns are eigenvectors of Σ and L is a diagonal matrix whose non-zero elements are eigenvalues. R = V and S = $\sqrt{L}$. R is a rotation matrix and S is a scaling matrix.

$$\Sigma = VLV^{-1}$$

$$\Sigma = RSSR^{-1}$$

$$R = \begin{bmatrix} cos(\theta) & -sin(\theta) \\ sin(\theta) & cos(\theta) \end{bmatrix}$$

$$S = \begin{bmatrix} s_x & 0 \\ 0 & s_y \end{bmatrix}$$

Ratio between player's speed and maximum speed:

$$Srat_i(s) = \frac{s^2}{10^2}$$

Scaling matrix:

$$S_i(t) = \begin{bmatrix} \frac{R_i(t)+(R_i(t)Srat_i(\vec{s}_i(t)))}{2} & 0 \\ 0 & \frac{R_i(t)-(R_i(t)Srat_i(\vec{s}_i(t)))}{2} \end{bmatrix}$$

Covariance matrix:

$$COV_i(t) = R(\theta,t)S_i(t)S_i(t)R(\theta_i(t),t)^{-1}$$

Distribution mean:

$$\mu_i(t) = p_i(t) + \vec{s}_i(t) \cdot 0.5$$

Radius:

$$R_i(t) = \sqrt{(x_{qb} - x_i)^2 + (y_{qb} - y_i)^2}$$

Defensive player influence model:

$$I_{dp} \sim N(\mu, \sigma)$$

Defensive team influence model:

$$DTI \sim \sum_{dp \epsilon D} I_{dp}$$

Continuous pressure:

$$CP \sim \frac{DTI}{DTI + OPI}$$

Offensive player influence model:

$$I_{op} \sim \frac{d(i) \cdot \theta \cdot N(\mu, \sigma)}{180 \cdot d(0)}$$

Offensive team influence model:

$$OTI \sim \sum_{op \epsilon O} I_{op}$$

Continuous pocket pressure:

$$CPP \sim \frac{\int\int N(\mu_{qb}, \sigma_{qb}) \cdot CP(x,y)\, dx\, dy}{\int\int N(\mu_{qb}, \sigma_{qb})\, dx\, dy}$$

Kaplan-Meier estimator:

$$P(f) = \frac{Alive_f}{Alive_f + Dead_f}$$

Simpson integration:

$$PLE = \int_0^{40} P(f)\, df$$