Matrix that evaluates the likelihood of pirate attacks during interstellar travel is a brilliant idea! Here are some variables that could help quantify this probability score:

1. Distance Between Star Systems:

Euclidean Distance: Longer distances between star systems could correlate with higher likelihoods of attacks, as pirates may thrive in unregulated and vast spaces.

2. Scarcity of Commodities:

Commodity Value: Higher-value commodities may be more attractive to pirates.

Regional Scarcity: Regions with scarce resources may see more pirate activity as they target ships carrying those in-demand commodities.

3. Frequency of Trade Routes:

Trade Volume: High-frequency trade routes may have increased pirate activity due to higher traffic and more opportunities.

Historical Attack Data: If available, historical data on past pirate attacks on certain routes can provide insights into trends.

4. Security Measures:

Patrol Presence: Areas with strong patrol presence may have lower attack likelihoods.

Security Ratings: Ratings of star systems based on their security measures and defenses.

5. Political and Economic Factors:

Political Stability: Unstable regions may have higher pirate activity.

Economic Conditions: Poor economic conditions in a region might drive individuals toward piracy.

6. Environmental Factors:

Nebulae and Asteroid Fields: These can provide hiding spots for pirates.

Sensor Interference: Areas with high interference might make detection of pirate ships harder.

Example Variables for Your Matrix:

| Star System Pair | Distance | Commodity Scarcity | Trade Volume | Security Rating | Historical Attacks | Environmental Factors | Probability Score |

| AlphaBeta | 10.5 LY | High | Medium | Low | 3 | Nebula Nearby | 0.75 |

| GammaDelta | 22.3 LY | Low | High | High | 1 | None | 0.25 |

| EpsilonZeta | 15.8 LY | Medium | Low | Medium | 5 | Asteroid Field | 0.60 |

Feel free to adjust these variables and their weights based on your specific context and available data. This matrix will help provide a clearer picture of the potential risks during interstellar travel.