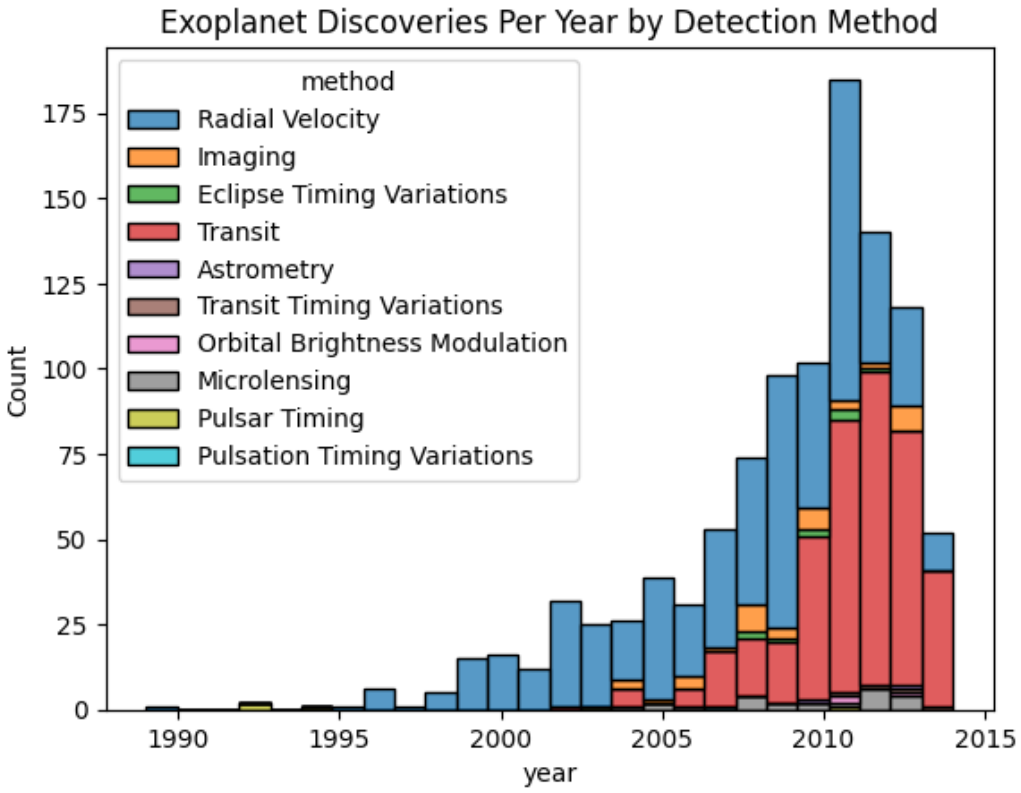
■ Exploring the Universe of Exoplanets with Python & Seaborn

Recently, I explored an exoplanet discoveries dataset ■ — a collection of planets discovered outside our solar system. Using Python's Seaborn library, I visualized patterns in discoveries, planet characteristics, and detection methods. Here's what I found and how I visualized it.

1■■ Exoplanet Discoveries Over Time

Chart: Histogram of discovery years by method

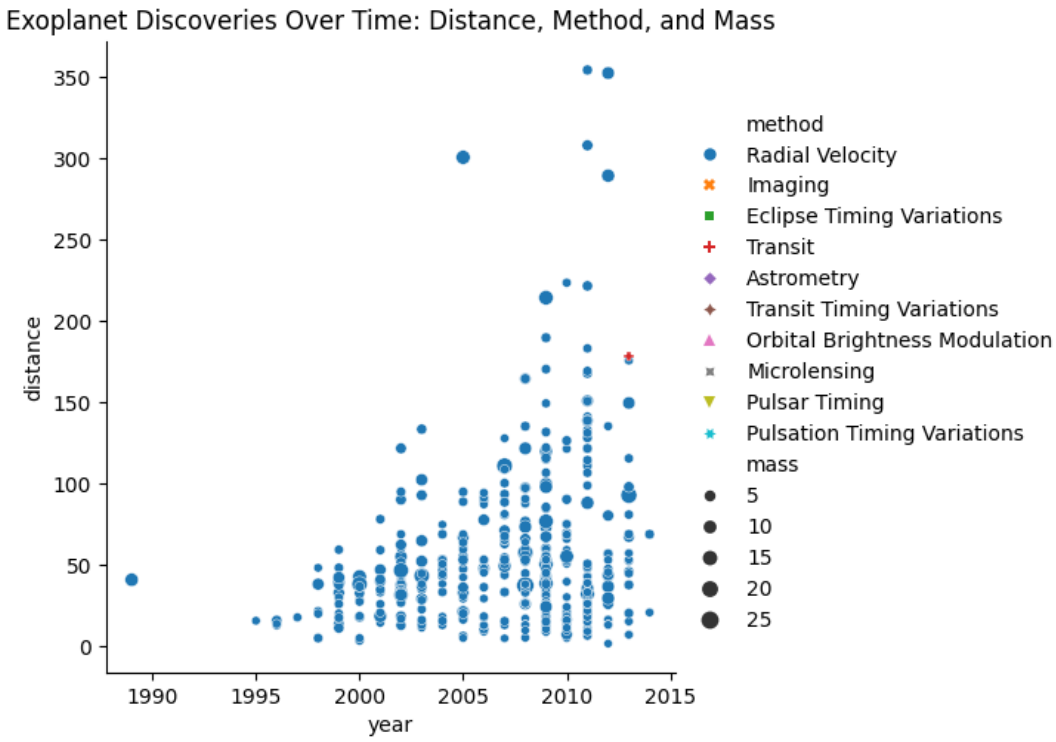


Insight: Radial Velocity dominated early discoveries.

Transit method became dominant in recent years.

2■■ Distance vs Discovery Year

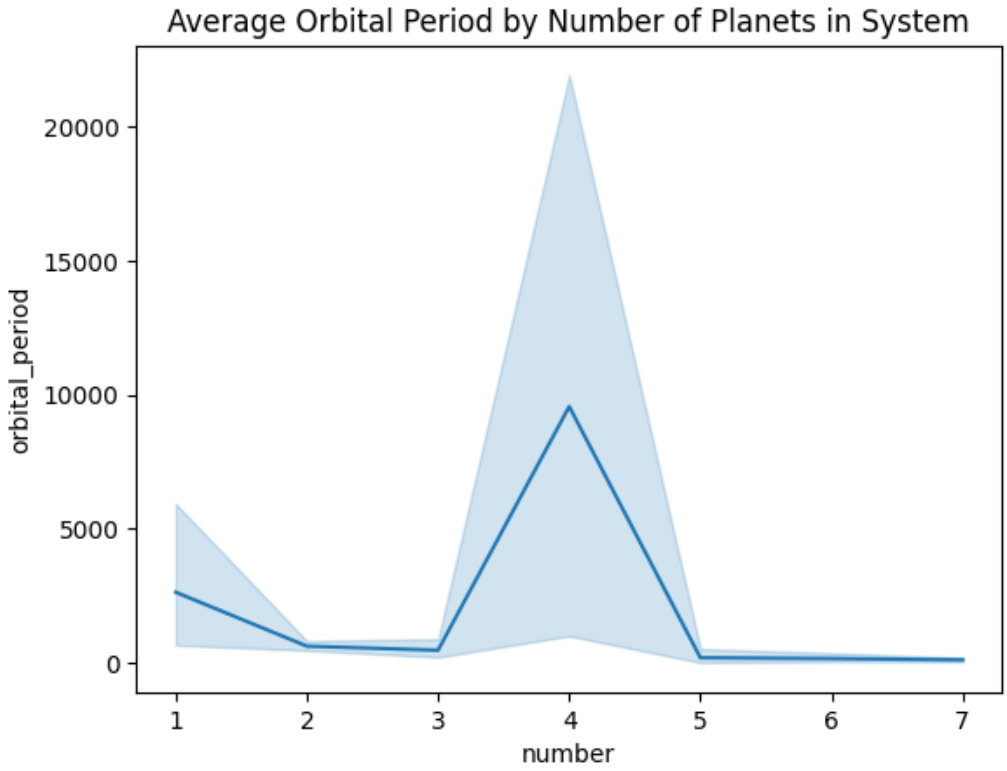
Chart: Scatterplot of distance from Earth over years



Insight: Early discoveries were closer systems. Recent missions are detecting planets farther away.

3■■ Trends in Orbital Periods

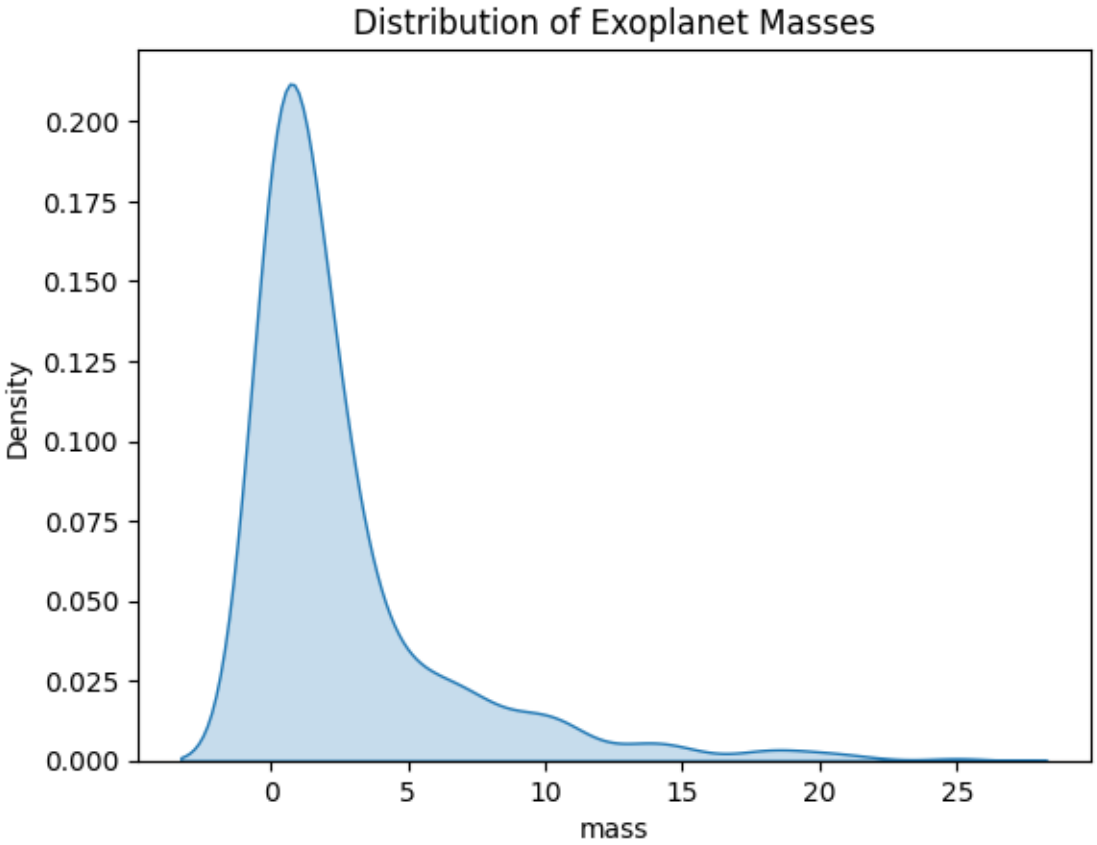
Chart: Lineplot of orbital period by number of planets



Insight: Single-planet systems often have shorter orbital periods. Multi-planet systems show more variation.

4■■ Exoplanet Mass Distribution

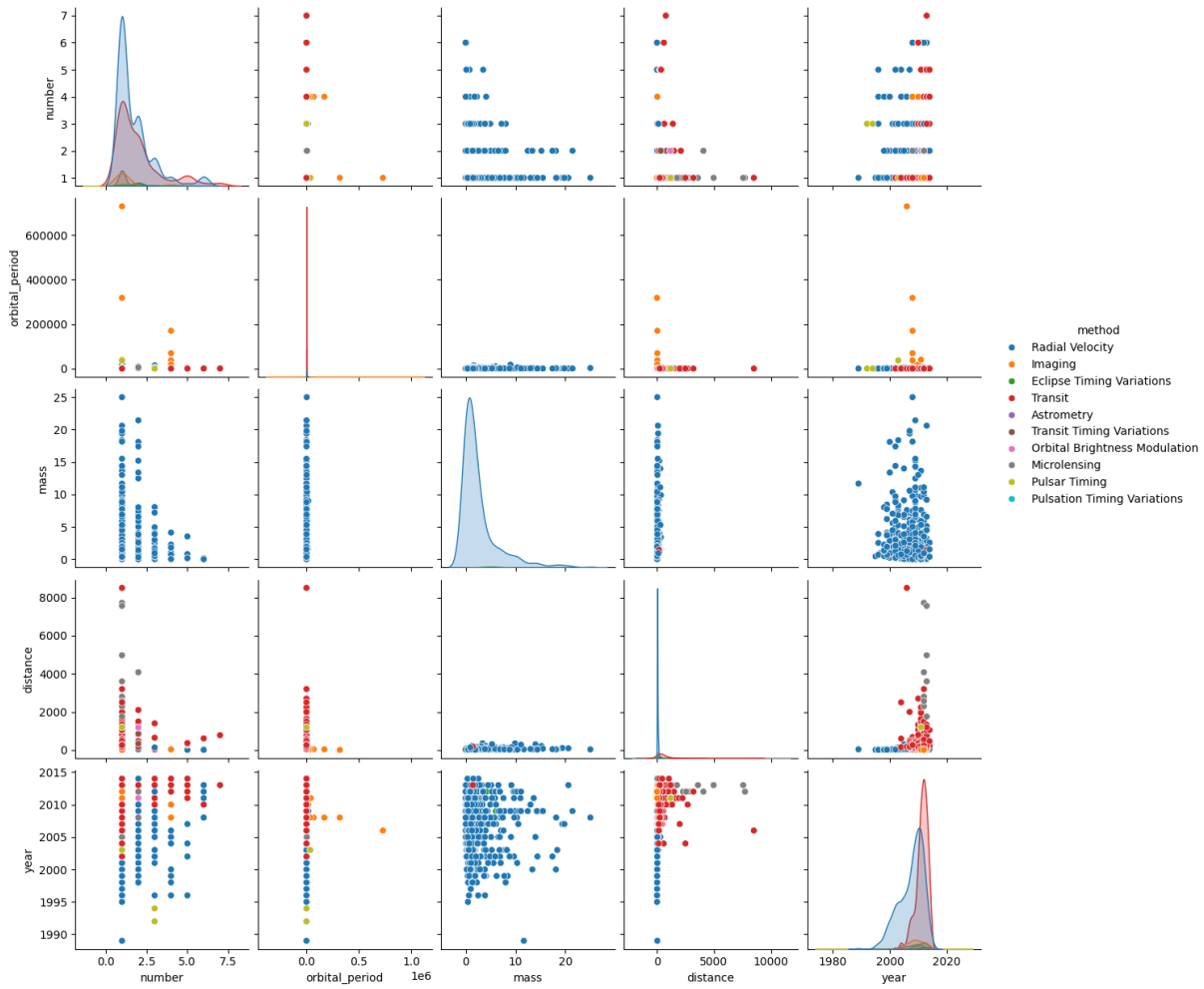
Chart: KDE plot of exoplanet masses



Insight: Most discovered planets are small to medium-sized. Large gas giants are rarer.

5■■ Relationships Between Variables

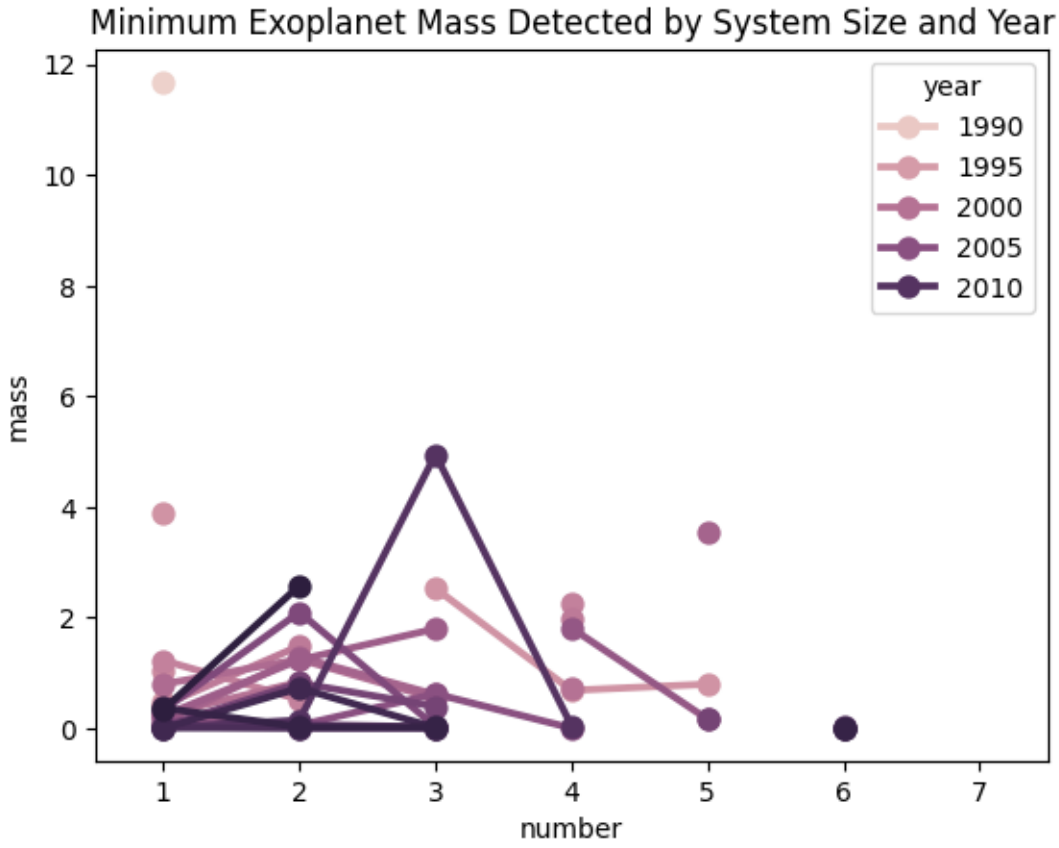
Chart: Pairplot of key features by method



Insight: Visual correlations appear between orbital period, distance, and mass. Different detection methods are effective at different ranges.

6■■ Minimum Mass Detected by System Size

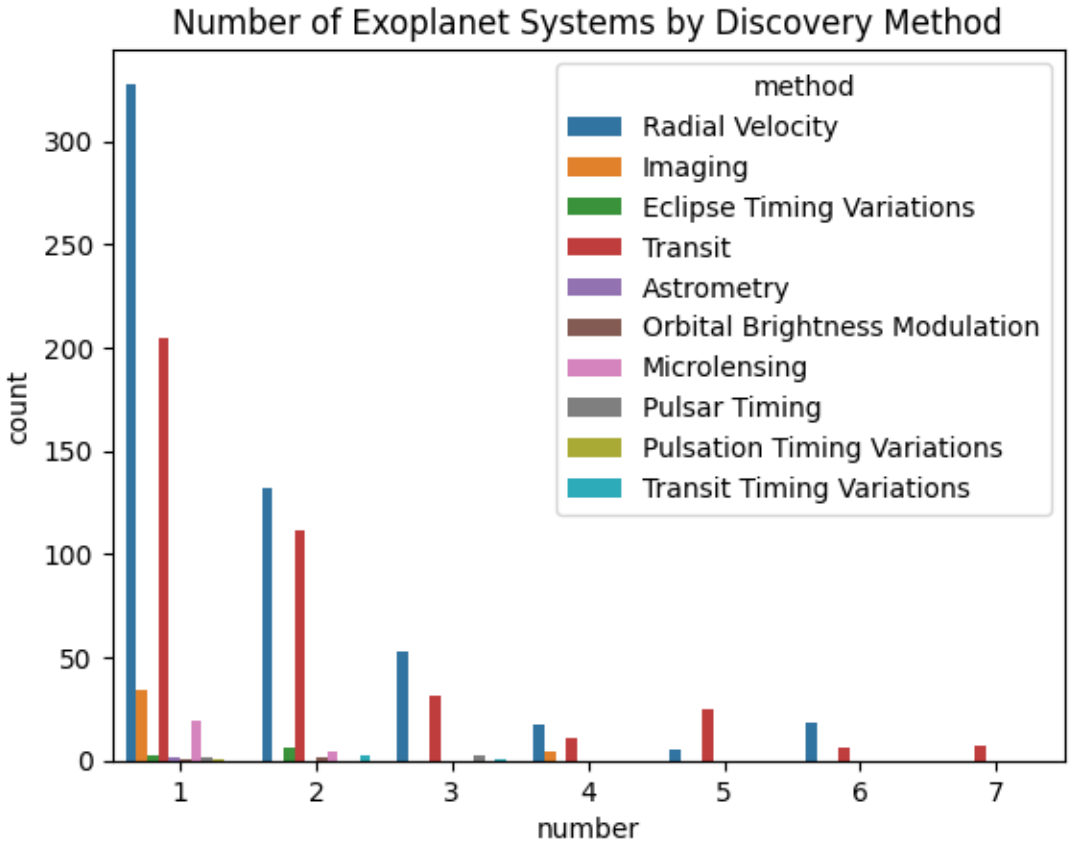
Chart: Pointplot of minimum planet mass by system size and year



Insight: Over time, smaller planets are being detected thanks to improved technology.

7■■ Distribution of System Sizes

Chart: Countplot of number of planets per system by method



Insight: Single-planet systems are most common. Transit and Radial Velocity methods dominate discoveries.