My Entrepreneurial Elevator Speech:

My specialty is Kalman Filter-like theory and applications, which involve software algorithms that process measurements from sensors (perhaps more than one, with different types of measurements, with different [specified] levels of noise corruption, and different sampling rates) in order to accurately track object(s), whose time-varying dynamics are described by **O**rdinary **D**ifferential **E**quations (**ODE**'s), reflecting the physical laws acting upon the objects, which can sometimes be central forces of gravity or control actions related to its propulsion. Kalman-like filters are routinely used in target tracking of an enemy (for DoD) or of cooperative platforms (for FAA/ARINC) or in performing calculations supporting the navigation function for a particular platform so it accurately knows where it is and can then figure out how to get where it wants to be, or how to launch its weapons at a threatening enemy platform or country, if called upon to do so. Kalman filter tracking outputs can also be further refined as inputs to multi-target tracking algorithms.

I am sometimes asked to select the sensors to be used for a particular application and the requisite sampling rates (i.e., data rates) to support mission goals. Other times, the client already knows what they want to use for their application.

I have performed design and processing for air-borne, land-based vehicle, and submarine and other ship-borne applications.

All NASA applications use Kalman filter algorithms too for tracking their "birds", space vehicles, and space objects. They also use Kalman-like filters for navigation (and guidance laws). DoD uses MORE Kalman filters than NASA since they have MORE applications and MORE platforms. I have worked directly in Kalman filter applications since 1973 to the present. Many aspects are classified for DoD applications.