Additional Resources

We **highly** recommend **this Github repository** as a resource to learn more about Kalman Filters. It contains interactive Jupyter notebooks which cover these algorithms in detail. Chapter 10 covers UKFs and 11 is on EKFs.

Extended Kalman Filters

Did you know that the Crazyflie uses an EKF for state estimation? The code is open source and you can **check out the repository here**.

This implementation is based on two papers:

- 1. A covariance correction step for Kalman filtering with an attitude
- 2. Fusing ultra-wideband range measurements with accelerometers and rate gyroscopes for quadrocopter state estimation

Unscented Kalman Filters

- The Unscented Kalman Filter for Nonlinear Estimation is a short paper (only 6 pages) and does a great job explaining the UKF.
- A New Extension of the Kalman Filter to Nonlinear Systems is a bit longer (12 pages) and includes some helpful example applications.
- The Scaled Unscented Transformation gives a mathematical derivation of the unscented transform.