The Kalman Filter On-line Learning Tool

Team Report

Greg Welch, client

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Chris Riley, Director  Tom Bodenheimer, Producer

Erin Parker, Admin. Leader  John Carpenter, Librarian
1 How the project went overall

Overall, *The Kalman Filter On-line Learning Tool* project went well. As a team, we accomplished our goal of producing a functional web-based tool that demonstrates the Kalman filter. The tool captures the basic intentions of the team and, we believe, of the client. Certainly, there are some features that were dismissed by the team either because time did not allow for their implementation, or the project evolved so as to make them unnecessary. However, the team did complete the ‘bare minimum’ of what was required (Kalman filter engine, user interface, plot display) and more (simulation stepper, help buttons). Furthermore, our implementation of the tool is designed to be easily extended and modified, facilitating the inclusion of features we were unable to complete.

The team experienced no major hardships or ‘show-stoppers’. However, the complication of writing Java to run on the web was a mild thorn in our side for the entire semester. The decision of whether to use Java AWT classes (widely-supported, but with limited functionality) or Java Swing classes (limitedly-supported, but with the latest functionality) caused us much grief. In addition, including the ‘data-dump’ feature, which writes simulation data to the user’s local file space, caused us to spawn an application version of the tool. Although, in the end, the team was satisfied to produce both applet and application versions using the Java Swing classes.

2 What you learned

The team learned the importance of carefully and thoughtfully constructing a project design early. With such a limited time to develop our tool, the more issues investigated and decisions made in the design phase, the better. However, we still believe that making the most of the design phase is very, very difficult. Some issues and some decisions simply do not manifest themselves until the implementation stage, and at that point, it is difficult to resolve problems in a way that is beneficial to the overall design (and not in a way that is easiest for the time being).

3 What you would do differently next time

Given another opportunity, we would more carefully construct the project schedule. We gave considerable thought to our project-related tasks and how much time they would require. However, we neglected to consider our semester schedules outside of Comp 145. The project schedule we constructed would have been accurate if we were working in a vacuum. Giving a little more thought to our other deadlines throughout the semester would have yielded a schedule that was more realistic and easier to follow. Nonetheless, we did complete a satisfying number of our goals on time.

4 Client satisfaction

Outwardly, our client seems pleased with our accomplishments for the semester. He gave only positive remarks every time we demonstrated the tool to him. Of course, there are several features that that client requested at the beginning of the semester, which are absent from the final project. Some of the features were dropped as the project evolved, and some were possibly impractical for the semester-long time period. Given the final project, the client seems satisfied to modify and extend it as he sees fit.

Admittedly, the team did receive somewhat ‘mixed signals’ from the client at times. We were sometimes confused by boss and client feedback coming from the same person. However, it is our perception that the client feedback was primarily positive.