Actitracker is the smartphone based activity-monitoring system created by the Wireless Sensor Data Mining (WISDM) Lab. Actitracker employs predictive models generated using data mining methods to identify users’ physical activities (e.g., walking, sitting, etc.) based on readings from the smartphone’s accelerometer. When a user runs the mobile app, the phone continuously sends accelerometer data to our server, which determines the activity being performed from a classification model. If a user completes the app’s training mode and provides labeled data, a personalized model is used; otherwise, the system employs a pre-built model.

Within the past year we have not only improved the Actitracker system, but also deployed a user-friendly commercial app and website so users can easily access their results and monitor their levels of fitness. The mobile app has been improved from both a functionality and user-interface standpoint. Entire parts have been re-coded and restructured, fostering an intuitive and seamless user experience. Additionally, there has been significant performance testing and optimization, yielding a more efficient and reliable product. Actitracker’s website features comparative graphs and charts that display individual results alongside statistics from user peer groups. The website also displays the FitDex, a metric we developed that maps a user’s daily activity to a value between 0 and 1,000.

Future Work

- Social media integration
- Actitracker app for smartwatch
- Utilize gyroscope and barometer
- Move processing and visualization functionality from server to client
- Develop orientation-independent features