

Proposed Abstract for UGrads

Hydro Citizens

March 2, 2018

The United States federal and state governments, as well as local agencies, rely on the collection of hydrological data in order to accurately predict and prepare for extreme hydrological events, namely floods and droughts, as well as to determine how much water will be available for use in a given period. Current solutions to the collection of hydrological data include Water Gauge stations deployed by the United States Geological Survey (USGS) however, significant yearly maintenance costs make them impractical for remote locations or areas of rivers and streams that do not flow year-round. Our client, Dr. Benjamin Ruddell, has proposed a low-cost solution to this issue which will allow citizens to collect water height data of streams in their area using a mobile application. Our team has developed this mobile application which will give users the ability to take pictures of striped PVC “gauging poles”, previously installed by other active citizens throughout a neighborhood. The mobile application then processes the image to extract the water height at the site, updating the data to a central server. Users are also provided with graphs that display the water height at a specific location over time, so that they can see how their measurements contribute to the national collection of hydrological data. The application also exports new hydrological data to the databases of the Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI).