System Data Aggregation for Linux-Based Applications

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GENERAL AUDIENCE ABSTRACT

Throughout the 10-week research project period, I worked closely with mentors and project leaders on the Waggle Project, a component of the Array of Things Project. The task that I had been assigned was to create a system to interface environmental sensors, called Nodes, that were deployed in the field with software that could monitor and record the sensor "health", i.e., diagnostic data. This system had three main functions: collect diagnostic data from the Nodes, send the data to a remote database, and show this data on a website. Using gained software and coding knowledge, this system was constructed and ready for deployment on the Node sensors by the end of the research project period. The system accomplished the three goals of data aggregation, data transmittance, and creation of a web app. It will help in diagnosing problems with Nodes earlier, therefore propelling the Array of Things Project forward to civic improvement. However, just as important as the completed system was the valuable insight I gained working closely with other employees and interns. This internship imparted valuable knowledge about new software techniques and programs. The collaboration and dialogue between myself, other interns, and the project leaders and mentors aided my understanding of the dynamic of both a workplace and a research team and improved my skills in group collaboration on a large project. This newfound knowledge, both technical and social, will be tremendously useful for future work endeavors, and I am extremely grateful for my time at Argonne, the opportunity to work on a great research project, and the people from whom I learned.