



## CTG STILE Program Interns: Blockchain

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### Job Description

The Center for Technology in Government (CTG), University at Albany is looking to fill several intern positions for its 2018 Student Technology Innovation Lab Experience (STILE) program. For the Spring 2018 Semester, one of the STILE program focus areas is Blockchain. The Blockchain project will focus on developing a better understanding of Blockchain capabilities by building IoT and Blockchain prototype applications. Specific assignments can include current practices research; designing technical specifications and tasks from user requirements; developing code for web and database application; integrating third-party software as required; and conducting unit, integration, and validation testing. All work will use Git and Scrum, the agile software development framework, and test driven development. Successful interns will be able to learn new programming languages, use creative problem solving techniques, and use the web as a resource.

### Project Design

The project is designed to answer basic questions through building prototypes. To support development, a private Ethereum Blockchain will be built on a cluster of Raspberry Pi computers and second a set of Raspberry Pi computers will be used as IoT sensor devices.

- The student interns will use this Ethereum and IoT network to develop prototype applications to secure and visualize IoT data.
- The student interns will also develop and present presentations of the prototype applications.

These prototypes will help answer questions such as:

- How can we describe the capabilities of Blockchain in non-technical ways, so that system architects, CIO level professionals can make informed decisions where Blockchain technologies fit in their IT environment?
- Where are the Blockchain technology boundaries, when Blockchain technologies are being used to secure the IoT? Does the IoT device participate in the IoT network? Or a proxy on behalf of IoTs? If a proxy how is data validated from the IoT to proxy, and how is that represented in the data?
- When providing public access to the data on the chain, such as air quality or weather data, does the web visualization frontend take data directly out of the chain or is there a proxy like an open data portal? If a proxy is used how does the web visualization frontend validate the data taking advantage of the Blockchain?

### Required Qualifications

(1) Enrolled in a graduate level computer science program, (2) Demonstrated skills with research tools and techniques, (3) Excellent writing ability, (4) Strong analytical skills, and (5) Strong communications and interpersonal skills.

### Preferred Qualifications

Familiarity with newer technologies and frameworks is a definite plus. Experience with Python, JavaScript, CSS, Git, Linux recommended. Interns must be comfortable in tackling difficult problems, learning new technologies and bringing their own interests and abilities into play when pursuing solutions.



# CENTER FOR TECHNOLOGY IN GOVERNMENT

UNIVERSITY AT ALBANY State University of New York

## Location and Duration

These positions are located at the Center for Technology in Government, University at Albany, State University of New York. The positions will begin in the Spring 2018 Semester. During this time, the commitment is for 20 hours a week.

## Compensation

This is an unpaid position, however CTG can serve as an internship site for departmental internship courses or requirements. Please check with your department and advisor if you are interested in receiving academic credit for working at CTG.

## Application Instructions

Please e-mail a statement of interest and resume to:

G. Brian Burke

E-mail: [bburke@ctg.albany.edu](mailto:bburke@ctg.albany.edu)