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Contact Us

Chi Shen, cshen@uri.edu
Assoc. Director of Cloud and IT Infrastructure
Information Technology Services
University of Rhode Island

Introduction

Are you a student who likes to solve problems with scripting, programming, web applications, and cloud technology?

The URI ITS Cloud and IT Infrastructure team seeks ***students*** for working on projects involving ***scripting, programming, web applications, databases, AI applications, and/or use of Amazon Web Services (AWS)***. This is an exciting opportunity for those who like to solve problems with technology to gain real-world experience. This work will contribute meaningfully to the operations of URI IT services as well as other special projects for URI.

Qualifications

- Have some basic programming/scripting experience
- Want to learn about new technologies
- Want to design, architect, and put things together to build a solution
- Unafraid to “Google”, explore, experiment, and figure things out
- Want to have a tangible, real-world, positive impact on the University
- ***Must be able to work for at least one term (semester/summer), minimally for 15hr/wk.*** Includes twice-weekly meetings with a supervisor to make sure ***steady, substantive progress*** is being made. If you are looking for

Outcomes

- Work done in this position can fulfill the requirements for **CSC 477** and **CSC 499**
- You will learn and work on various IT-related technology in a real-world context.
- You will gain real-world experience, which is valuable for **distinguishing yourself** when applying for jobs
- You may get various certifications (AWS Cloud Practitioner, AWS Associate Solutions Architect, LPI Linux Essentials), also useful for distinguishing yourself.

Past Projects / Internships

Remember, in most of the below, students had no prior experience in the specific area of the project. Part of the experience is to learn, research, and implement things that are new to them.

- **Automating website uptime and server port polling, logging, monitoring** -- using Python scripts, Flask frontend, and Grafana for visualization and alerting. (Jackson Perry)
- **Use Amazon Bedrock to synthesize answers to IT questions**, in the context of a Discord chat bot, using information from Service Desk web pages, ServiceNow knowledge base articles, and Google Drive. (Zach Lerner)
- **Implement public IT service/system status page using Cachet**, with alerting from Grafana, and with data pull from Google Calendar. (Zach Lerner)
- **Automated monitoring of the security metrics of ITS's AWS deployment**, via AWS CLI, PowerShell, dashboarding/visualization with Grafana (Jeanette Barboza)
- **Web-based virtual machines for managing Active Directory**, using AWS AppStream (Daniel Roche)
- **Automated monitoring of AWS resources**, via AWS CLI, dashboarding/visualization with Grafana (Ryan Tsang)
- **High-availability architecture** for the ITS-hosted copy of LibreChat, using HAProxy and Docker containers. (Anthony Pellicone)
- Deployment and of **LibreChat** for local ITS pilot program. (Madhukara Kekulandara)
- Deployment of **VictoriaMetrics time-series database** and data collection agents (Anthony Pellicone)
- **Automated uptime/health checks for websites** and other HTTP/TCP-based services, implemented in Python, PowerShell, with data recorded via API to VictoriaMetrics time-series database, and with dashboarding/visualization in Grafana. (Jackson Perry, Nick Rapoza)
- Exploration of **low-code/no-code application development frameworks**, such as Oracle APEX (Ryan Golden)
- **Web-based chat assistant which performs tasks/actions**, such as starting/stop virtual machines, taking snapshots, restoring from snapshots, etc. -- using AWS Lex, Lambda. (James McCaffrey, Jacob Turner)
- **Web-based chat assistant for conveying information** (e.g. for Enrollment Services). Both pre-canned question-answer pairs, and GenAI synthesized answers from web pages and document stores, using AWS Lex, Kendra, and Bedrock. (Tanya Li, William Kingvilay)
- **Go-based web application** for internal IT staff to dynamically query staff and student information from PeopleSoft and Active Directory. (Simeon Larinde)
- **Efficiently refactor and rewrite the PowerShell scripts** which provision URI accounts from PeopleSoft to Active Directory, reduced daily processing time from around 12 hours to 5-10 minutes. (Anthony Pellicone)
- Establishment of self-hosted ITS **Grafana for dashboarding and data visualization**. (Taleed Shariff, Amer Al-Sarayi)