Faculty Project: Computer Science

Title of Project: Development of Automatic Software Testing System

Main Contact: Li Han, LHan@clarku.edu, 508-793 7344

Deadline: March 15th 2017 (March 1st for Early decision)

Duration: Minimum of 200 hours

Locations: Students may work remotely from Clark, as long as they can use VPN to get on the Clark campus network. Students must keep in contact with the faculty advisor and make progress reports on a regular base during the project period.

Position Description:

The project aims to enhance and expand the preliminary automatic testing software that has been used in the evaluation of student work in CSci 160 (Algorithms). The current system needs improvement in multiple aspects, such as better integration of the submission and testing sub-systems, more reliable time-out mechanism, better distribution of test cases, graceful termination of the testing system over unexpected errors in student programs, and adaptation of new system libraries.

In addition to substantially improve the testing system for CSci 160, students in this LEEP project will develop a preliminary testing system for the anticipated course work of CSci 124 (Honors Introduction to Computing) this fall. The current plan for CSci 124 includes java assignments also used in CSci 121 (Data Structures) and python assignments in bioinformatics.

Upon successful completion of this project, students will gain valuable experience and important skills in collaborative project development, critical thinking of algorithmic issues, professional coding and thorough testing. Their work can have long term impact on the computer science program at Clark, benefitting student learning and laying a foundation for potentially expanding automatic testing to other computational courses.

Qualifications:

Applicants must be computer science majors and have a strong background in data structures and algorithms, with at least a B- in CSci 121, Math 114 (Discrete Math) and CSci 160. It is preferable that applicants have earned a B- or above in all their CS courses.

Additionally, applicant should have good work ethics and strong problem-solving skills, and enjoy learning new materials, solving hard problems and producing high-quality work in a timely manner.

Housing: Housing will not be provided.

Funding: $2500 Available through the LEEP Fellows Program

How to Apply: Send cover letter, resume and transcript to Professor Li Han via email LHan@clarku.edu on or before March 15th.

About the Organization:
Clark's academic community has long been distinguished by the pursuit of scientific inquiry and humanistic studies, enlivened by a concern for significant social issues. Among many other scholarly endeavors, Clark
contributes to understanding human development, assessing relationships between people and the environment, and managing risk in a technological society.

Clark is dedicated to being a dynamic community of learners able to thrive in today’s increasingly interrelated societies. The University maintains a national and international character, attracting high-caliber students and faculty from all quarters of the globe.