MACAU SPECIAL ADMINISTRATIVE REGION OF CHINA
VACANCY ANNOUNCEMENT

Web Programmer (back end)
(Individual Contractor Contract)

Organizational Unit: United Nations University – Institute on Computing and Society
Reference Number: 2019/UNU/CS/CIC/WP/BE/6
Applications to: By Email: apply_cs@unu.edu
Closing Date: 31 January 2019

United Nations University
For the past four decades, UNU has been a go-to think tank for impartial research on the pressing global problems of human survival, conflict prevention, development, and welfare. With more than 400 researchers in 13 countries, UNU’s work spans the full breadth of the 17 Sustainable Development Goals, generating policy-relevant knowledge to effect positive global change. UNU maintains more than 200 collaborations with UN agencies and leading universities and research institutions across the globe.

UNU Institute on Computing and Society
The United Nations University Institute on Computing and Society (UNU-CS) is a research institute at the intersection between information and communication technology (ICT) and international development. UNU-CS conducts policy-relevant research projects, focusing on key issues faced by societies as expressed in the UN 2030 Agenda for Sustainable Development through high-impact innovations and technologies. Through its research, UNU-CS encourages data-based and evidence-drive actions and policy towards achieving the Sustainable Development Goals. More information about UNU-CS can be found at https://cs.unu.edu.

Apprise
Apprise investigates the use of ICTs to assist potential victims of human trafficking, forced labor, and other forms of labor exploitation to identify themselves to frontline responders and enhance their conditions. To understand how ICTs can be leveraged to support potential victims, this research aims to answer the following questions:

1) How do NGOs and frontline responders currently identify victims of human trafficking, and what problems do they believe there are in this method?
2) What access do potential victims, NGOs, and frontline responders have to ICTs, and what factors enable and constrain their use?
3) What ICT tools would enable migrant workers to self-identify as a victim of human trafficking?

More information about Apprise is available at [https://cs.unu.edu/research/migrant-tech-apprise/](https://cs.unu.edu/research/migrant-tech-apprise/).

**Responsibilities**

The incumbent will support the Migrant Tech Principal Investigator (PI) as a web programmer for the Apprise program, executing development, programming, testing, debugging, and implantation of application releases, modules, and functionalities.

**Required qualifications and experience**

- University degree, preferably in Information Technology, Computer Science, or related field
- 5 years' experience as a professional software developer
- Computer language skills: PHP, SQL, MVC Architectural Patterns
- Experience integrating diverse applications using integration frameworks, web services, and APIs
- Strong web security experience
- Capable of deploying and maintaining software remotely on a Linux or UNIX-like server
- Experience with data management and visualization
- Experience with Github or another version control software
- Experience with Laravel (desired)
- Experience with Docker (desired)
- Spoken language: English
- Excellent communication skills, written and verbal
- Strong interpersonal skills
- Ability to work with a team as well as independently. Ability to interface, collaborate with technical staff and designers. Ability to be a self-starter and to work with minimum supervision.

**Remuneration**

A total project fee of USD 7,000 will be paid under this contract, payable in five (5) installments upon confirmation of completion of required deliverables set by the PI.

UN income is not subject to taxes in Macau. The contractor will be responsible for paying local taxes and other fiscal obligations.

No travel is required. The successful candidate will be employed as an individual contractor and will not hold international civil servant status, nor is he/she a “staff member” as defined in the United Nations Staff Rules and Regulations.

UNU-CS accepts no responsibility for the medical and life insurance or costs arising from accidents and illness incurred during the contract period.

**Duration of contract:** 12 February 2019 – 30 June 2019

**Starting date:** 12 February 2019
Application Procedure:

Interested applicants should submit their applications by email to apply.cs@unu.edu with the subject line "Application for position Web Developer (back end) (Ref No: 2019/UNU/CS/CIC/WP/BE/6)" by 31 January 2019, and must include the following:

1) A Curriculum Vitae
2) A cover letter setting out how the qualifications and experience match the requirements of the position
3) A completed and signed UNU Personal History (P.11) form downloadable from the UNU website (please avoid using similar forms provided by other United Nations organizations)

Please note that applications received after the closing date will not be considered and only short-listed candidates will be contacted for this position.

Applications from suitably qualified woman candidates and those from developing countries are particularly encouraged.

The United Nations shall place no restrictions on the eligibility of men and women to participate in any capacity and under conditions of equality in its principal and subsidiary organs. (Charter of the United Nations - Chapter 3, article 8).
Annex 1

Apprise Architecture

Apprise consists of two parts - a backend and frontend (a mobile client). The backend allows users to define lists of questions, with each question being translated into a number of languages. Audio recordings of questions are hosted on the server. There is a REST API that supports communication between the backend and the mobile client. On login, the mobile client receives the list of questions (and the corresponding translations) that a particular user has access to. The mobile client then allows users to answer questions (referred to as screening sessions) which, when synchronized, are sent to the server. Both the client and the server perform a calculation of vulnerability based on the user response to each question and the meta data associated with the questions.

Deliverables

1) Work Package 1
   a. Understand existing system and develop unit tests
   b. Update algorithm for calculating vulnerability
   c. Update file download: check for new files on login, and download from server

2) Work Package 2
   a. Develop new features, based on result of initial evaluation, in particular:
      i. Update user interface for adding translations of languages
      ii. Extend the session visualization (show attributes of responses on Google Maps plugin)
      iii. Upgrade communication features: send emails to users to ask to create accounts; connect to Slack for communication of warnings /errors; send emails to reset passwords
      iv. Update interface for adding users to groups (ensure privacy and compartmentalization)

3) Work Package 3
   a. Migrate backend and all functionality to Docker environment
   b. Complete user documentation based on Docker setup

4) Work Package 4
   a. User interface consistency
   b. Security audit and upgrade of system
   c. Minor upgrades
   d. Increase test coverage and performance of backend APIs and backend modules

5) Work Package 5
   a. Respond to requests for minor system changes as a result of ongoing user evaluation (working in collaboration with the PI).

Remuneration

A total project fee of USD 7,000 will be paid under this contract, payable in five (5) instalments as described below and upon confirmation of completion of required deliverables set by the PI.

- Work Package 1. Due by 28 Feb 2019
- Work Package 2. Due by 31 March 2019
- Work Package 3. Due by 30 April 2019
- Work Package 4. Due by 31 May 2019
- Work Package 5. Due by 30 June 2019

Further information

If candidates would like to have access to the system, please contact apprise@unu.edu and a test account can be created for them in the staging server.