



SOUTH EASTERN UNIVERSITY OF SRI LANKA

Accelerating Higher Education Expansion and Development (AHEAD) project

WALK - IN – INTERVIEW

Freelance Development Assistant (Contract Basis)

Prospective candidates are invited for a walk-in interview scheduled to be held on **19th of November 2021 (Friday), 03.00 PM onwards** at the Operations and Technical Secretariat (OTS), AHEAD Operations, SEUSL, Oluvil for the Post of Freelance Development Assistant Contract to the AI Enabled System and Methods for the Local Retail Sector (AHEAD/RA3/UBL/SEU/OVAA18) University Business Linkage Cell South Eastern University of Sri Lanka.

1. Required Qualifications & Experience

- Bachelor level education in computer/electrical and electronics engineering.
- Prior experience in computer vision- Open CV.
- Prior exposure to microcontrollers, electronic circuit design and electronic prototyping - ESP 8266/32.

2. Required Professional Competencies

- Ability to transform a set of requirements into generic design.
- Ability to handle multiple programming languages and libraries.
- Ability to perform electronic design and simulations.

3. Method of Selection

This is a hired freelance service. The Contract of Appointment shall be for the period of assignment of tasks. Selection will be made on a structured walk-in interview. The walk-in interview will be held on 19th of November 2021, 3.00 PM onwards at the Operations and Technical Secretariat (OTS), AHEAD Operations, SEUSL.

4. Background

The development of the higher education sector is of central importance to enable Sri Lanka to make the transition from a Lower Middle-Income Country (LMIC) to an Upper Middle-Income Country (UMIC). Recognizing this, the Government of Sri Lanka (GoSL) and the World Bank have agreed to support the higher education sector through a Bank funded Accelerating Higher Education Expansion and Development (AHEAD) operation.

The University Business Linkage Cell / Tech-Transfer Office (UBL/TTO) of South Eastern University of Sri Lanka as a dedicated body operating to promote Research, Development, Innovation and Commercialization of research outcomes from the university to industry and vice versa. During its existence, the UBL has taken steps to identify and promote research and innovation in the university. Parallely, the UBL assists university researchers in increasing collaboration with professional expertise in technology transfer and business model development, establishing open innovation spaces and business incubators, and enabling academics and students to obtain professional business advice and training.

Accordingly, this TOR is meant for obtaining a resource person for freelance development assistance for the AI Enabled System and Methods for the Local Retail Sector.

5. The Operation

Recent advancement in machine learning and algorithm optimization techniques can be used to reduce hardware requirements thus reducing the cost. For example, instead of expensive specialized barcode readers, cheap off-the-self CMOS imaging sensors can be used to read barcodes. These techniques also can be used to improve the usability of the devices. For example, advanced artificial intelligence-based techniques can be used to reduce the number of steps necessary to complete a task by the user. One widely known example is one-touch fuzzy logic option available in the modern washing machines to eliminate manual entry of wash parameters from the operator.

AI Enabled System and Methods for the Local Retail Sector project aims to develop system and methods for retails sector especially in the area of checkout assistance technologies by using artificial intelligence, hardware and algorithm optimization techniques and extensive usability research to increase the usability while reducing the cost.

6. Scope of the Freelance Development Assistant Contract

The project aims to develop Artificial Intelligence enabled systems and methods for the local retail sector. Under this project, the selected resource person is expected to perform the following objective,

- Development of a low-cost barcode reader prototype using low cost SOCs or MCUs.

7. Key Tasks and Related Activities

The key tasks of the resource person are:

Key Task	Required Deliverable	Time Frame
Set up of test and development environments to provided SOCs or MCUs.	Identified setup parameters (voltage, baud rate etc..) and configuration files.	60 days
Implementing an image/video capturing system using the provided SOCs and MCUs and testing.	A working software code.	
Development of barcode reader prototype and testing under the guidance of PI.	Software code and working prototype of the low-cost barcode prototype.	

8. Duration of the Freelance Development Assistant Contract

The duration of the contract will be on successful completion of the assigned tasks from the date of signing the contract to 60 days.

9. Mode of Payment

Payment shall be made on successful completion of assigned tasks as mentioned in section number 05.

10. Payment Terms

The payment for the assignment will be made as full of LKR. 80,000.00 (Eighty thousand rupees only) including all on successful completion of the assignment and submission and acceptance of the reporting obligations mentioned in the TOR.

11. Approval of the Payments

For services rendered pursuant to TOR, the client shall release the payment to the Freelance Development Assistant upon the approval of UBL Advisory Board.

12. Reporting Obligations

The resource person shall closely coordinate and report to the primary investigator and the Director - UBL. The resource person shall submit the following reports/documents as per the requirement.

- Continuously inform the PI on relative merits, tradeoffs and hurdles of the hardware platforms and software framework and libraries experimented and attend weekly progress meetings arranged at South Eastern University of Sri Lanka.
- Activities conducted and working hours.

13. Ownership of the Assignment

This assignment is funded by the Ministry of Higher Education via AHEAD-OMST under the program component of AHEAD/UBL. As such, the University shall be the owner of the assignment and will reserves the Intellectual Property Rights for all deliverable of the assignment under the terms and conditions given in the IP policy of the University. The resource person will have no right of claim to the assignment or its outputs once it is completed and **no rights** to use **Data and Information** gathered through the assignment for other purposes without written permission from the Vice Chancellor of the SEUSL. Any Reports/ Data/Information produced as a part of this assignment shall be handed over to the Client in soft and hard formats.

Director
University Business Linkage Cell
South Eastern University of Sri Lanka
University Park
Oluvil #32360
067 205 2825