



APPLICATION FORM (JOINT RESEARCH) HIGH POTENTIAL INDIVIDUALS GLOBAL TRAINING PROGRAM)

AGREEMENT

As stated above, I submit this application form to IITP that conducts “High Potential Individuals Global Training Program” supported by Ministry of Science, ICT in South Korea. IITP may disclose the information below to the public for the purpose of providing information and matching a research partnership between your institute and a Korean university.

* IITP : Institute for Information & communications Technology Planning & Evaluation

Printed Name of Chief of Research Shahram Shah Heydari Date(mm-dd-yyyy) 01-30-2020

Signature of Chief of Research _____

(Note) This application is to identify the willingness to participate in this research and to find a research partnership for research institutes in Korea. Therefore, in its sole discretion, it is acceptable to contain only minimal information. (max. 3 pages)

1. Research Title	Qualitative Holographic Communication						
2. Research Area	A.I.	Big Data	Cloud Computing	Block Chain	AR/VR	ICT/SW Convergence	Other ICT /SW
		X			X	X	
3. Chief of research	Title	Associate Professor		Contact	E-mail : shahram.heydari@ontariotechu.ca		
	Name	Shahram Shah Heydari			Tel : +1-905-721-8668		
4. Affiliation	Name	University of Ontario Institute of Technology		Classification	(X) University () Research Institute () Industry () ETC.		
5. Capacity for students (5 or less)	2 (two)		Support for students (all necessary)		(X) Visa support (X) Research Mentoring (X) Research Space (X) Accessibility to Research equipment		



6. Research Objective	<ol style="list-style-type: none">1. Identify QoE metrics for real-time holographic communication2. Employ Deep Reinforcement Learning techniques for3. Develop methods for optimizing the communication of holographic content for achieving a given QoE
7. Research Summary	<p>This research proposal aims to design a framework for implementing a QoE-aware software-defined wide-area infrastructure for transmission of holographic or multi-sensory information, herein we will call “Qualitative Holographic Communication”. The main objective of this research is to investigate and address challenges in the following areas:</p> <ul style="list-style-type: none">• QoE Metrics for Holographic information• Qualitative network control functions such as QoE-aware congestion control, packet processing and flow management• Application of AI-based technique in optimizing network resources for qualitative holographic communication <p>Our proposed framework is user-centric, i.e. the quality metrics (which could include subjective and quantitative measures) are collected at the user side and summarized for a centralized network management system. We envision a framework in which network control functions take into account the impact on QoE in their packet processing decisions (e.g. if necessary, dropping content that has the minimum impact on the quality of holographic image), and where Reinforcement Learning algorithms are used to enhance the network performance by continuously evaluating the impact of network control and management decisions on end-user QoE, and by optimizing network resources to improve QoE metrics across the network edges.</p>
8. Need for funding from Korean government	<p>\$50000 total as following:</p> <p>\$25000/Student to cover the university overhead, cost of equipment and space, and personnel salaries.</p>
9. Request for Korean Universities	<p>The selection of students studying abroad should be conducted through mutual consultation. Intellectual property and publication rights to be negotiated between the institutions.</p>