

# Asia-pacific **J**ournal of **C**onvergent **R**esearch **I**nterchange

---

Volume 8, Number 12, December 31 2022

ISSN: 2508-9080

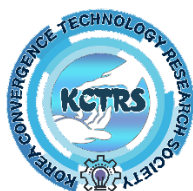
December 31 2022 Printed

December 31 2022 Printed

Publisher: KCTRS

Publishing office: Korea Convergence Technology Research Society  
30-5, Munji-ro 316beon-gil, Yuseong-gu, Daejeon, Korea  
E-mail: journal@kctrs.or.kr  
Tel: +82-70-7718-0866

Printing office: Copy Printing Co. Ltd  
Tel: +82-42-933-9775



**Korea Convergence Technology Research Society**

Copyright © 2022 KCTRS

All rights reserved