

SUBINA KHANAL

Intelligent Computing and Security (ICNS) Lab, Kyung Hee University (Global Campus)
Department of Computer Science and Engineering
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OBJECTIVE In pursuit of a researcher position where I can nurture my true potential of technical and analytical skills in applied machine learning, software development and testing.

EDUCATION Master's in Computer Science and Engineering 2020 - 2022 (February)
Department of Computer Science and Engineering
Kyung Hee University, Yogin-si, South Korea

- Thesis title: **Distributed Learning for Proactive Content Caching in Edge Networks**
- Advisor: Prof. Eui-Nam Huh
- Status: Successfully defended and submitted the MS thesis

CONCENTRATION
Edge Computing, Machine Learning, Federated Learning

CURRENT RESEARCH
Proactive Content Caching in Self-Driving Car using Hierarchical Federated Learning

Bachelor's Degree in Information Management (BIM) , 2016
Orchid International College, Tribhuvan University, Kathmandu, Nepal

SKILLS

- **Programming languages** : JAVA, Python, C, C++
- **Tools** : JIRA, Redmine, TestRail
- **Web and Database management** : HTML, CSS, SQL
- **ML frameworks** : TensorFlow, Keras
- **Data Analytics Packages** : Scikit-learn, NumPy, Pandas, Seaborn, Matplotlib
- **Soft Skills** : Project Management, Teamwork, Critical Thinking, Problem Solving

INDUSTRY EXPERIENCE **Tekvortex Pvt. Ltd.** 2018 - 2019
Quality Assurance Engineer (QA) on a data archiving platform for Smarsh Inc. (for Skype, Skype for Business, Jabber, QQ, LinkedIn, and Facebook)

- *Functional and Non-Functional Testing*
- *Integration Testing*
- *Issue Analysis and Replication: Regression Testing*
- *Managing Test Cases and Test Runs using TestRail*

- *Project Documentation and Communication*

mDev Tech Solutions Pvt. Ltd. 2017 - 2018
Junior Quality Assurance Engineer (QA) on ICA (International Center for Academic College of Distance Education & Online Studies) website, DPAY, Easy Inventory Management, MBM Gateway Project

- *Web Application Testing*
- *API Testing*
- *Writing and Execution of Manual Test Cases*
- *Preparation of appropriate and accurate documentation at all levels of quality spectrum*
- *Functional Testing and Integration Testing*
- *Defect Tracking and System Testing*

Planet Earth Solution Pvt. Ltd. April-June 2016
Intern, Web Development using .Net
mDev Tech Solutions Pvt. Ltd. April-May 2017
Intern, Quality Assurance Training

ACADEMIC EXPERIENCE

Kyung Hee University, ICNS Lab
Graduate Research Assistant with Prof. Eui-Nam Huh 2020 - Present

Kyung Hee University, ICNS Lab 2020 - Present

- Blood Pressure Monitoring System using JAVA
- AI Networking Project (Distributed Collaborative Learning for Edge Caching) using Python

Orchid International College, Tribhuvan University 2012 - 2016

- Web Design and Development in PHP
- E-commerce Site Application in JAVA

SELECTED SCHOLARSHIPS AND AWARDS

Excellent Paper at Korea Software Congress, KIISE 2021
Best Paper Award at ICUFN 2021
Ministry of Science and ICT Fellowship, Republic of Korea 2020 - Present
Brain Korea 21st Century Plus Fellowship 2020
Presidential Scholarship at Kyung Hee University 2020 - 2021
Rising Star Award, Tekvortex Pvt. Ltd. 2018
Academic Excellence Award
for securing first rank out of 800 students in the university 2016
Full Scholarship for Advance JAVA Training, Broadway Infosys Nepal 2016
University's Scholarship, Full tuition waiver
for securing highest rank in academic semesters 3rd, 6th, 7th 2014, 2015, 2016

**JOURNAL
PUBLICATIONS**

[J2] **Khanal, Subina**, Kyi Thar, and Eui-Nam Huh. “**DCoL: Distributed Collaborative Learning for Proactive Content Caching at Edge Networks.**” *IEEE Access* (2021)

[J1] **Khanal, Subina**, Kyi Thar, and Eui-Nam Huh. “**Route-based Proactive Content Caching using Self-Attention in Hierarchical Federated Learning.**” *IEEE Access* (2022)

**CONFERENCE
PUBLICATIONS**

[C5] **Khanal, Subina**, Thar, K., Hossain, M. D., & Huh, E. N, 2021, August. “**Proactive Content Caching at Self-Driving Car Using Federated Learning with Edge Cloud**”. In 2021 Twelfth International Conference on Ubiquitous and Future Networks (ICUFN). 17–20 August, Jeju Island, South Korea. (Selected for Oral Presentation) (Best Paper Award).

[C4] **Khanal, Subina** , and Eui Nam Huh. “**Distributed Learning-Based Proactive Content Caching for Improved Quality-of-Experience (QoE).**”. In 2021 Proceedings of the Korean Society of Information Sciences Academic Presentation, Jeju Island, South Korea. (Selected for Poster Presentation) (Excellent Paper Award).

[C3] Hossain, Md Delowar, **Subina Khanal**, and Eui-Nam Huh, 2021, August. “**Efficient Task Offloading for MEC-Enabled Vehicular Networks: A Non-Cooperative Game Theoretic Approach**”. In 2021 Twelfth International Conference on Ubiquitous and Future Networks (ICUFN). 17–20 August, Jeju Island, South Korea.

[C2] Sone, Phoo Pyae, **Subina Khanal**, and Eui-Nam Huh. “**Edge-Coordinated On-Device Learning for Personalized Intelligent Digits Recognition.**” In 2020 Proceedings of the Korean Society of Information Sciences Academic Presentation.

[C1] ur Rahman, W., Lee, S. J., **Khanal, S.**, An, Y., & Huh, E. N. (2020). “**Impact of Segment Duration on the Performance of Adaptive Streaming Algorithms over Mobile Networks**”. In 2020 Proceedings of the Korean Society of Information Sciences Academic Presentation.

**ACADEMIC
SERVICE**

Reviewer, IEEE Access

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