Date: 14/06/2024

Recommendation

Irshad Ahmad Oruzgani, a student of the Department of Information Technology and the Faculty of Artificial Intelligence and Big Data, successfully completed an Externship at Halyk Academy Lab from May 26, 2025, to June 14, 2025, under my supervision at our lab located at Al-Farabi 71.

During this period, Irshad focused on developing a federated learning framework for healthcare data using Flower and TensorFlow Federated (TFF), integrating open-source datasets related to diabetes readmission prediction. He demonstrated excellent technical competence, analytical thinking, and deep knowledge of distributed machine learning systems.

Irshad implemented and trained centralized and federated models—including an MLP architecture—evaluating their performance across multiple metrics such as accuracy, precision, recall, and F1-score. He explored various federated strategies including FedAvg and FedProx, and incorporated privacy-preserving techniques such as differential privacy during model training to enhance data security.

He also conducted experiments using multiple silos of hospital data, managed data preprocessing tasks (e.g., class balancing, normalization, label encoding), and developed Python scripts to run federated simulations efficiently. Irshad maintained detailed logs of round-wise model performance and interpreted the results with clarity and rigor.

His end-to-end project, from data preparation to model deployment and performance analysis, demonstrated his ability to work independently, solve complex problems, and apply advanced machine learning techniques in real-world scenarios.

Based on Irshad's performance and dedication, we recommend the following score for his internship:
Score:

I highly recommend Irshad for any future endeavors. His dedication, technical acumen, and eagerness to explore cutting-edge technologies will undoubtedly contribute to his continued success.

Sincerely,
Imanbek Baglan
Lab Supervisor
Halyk Academy Lab
Al-Farabi 71