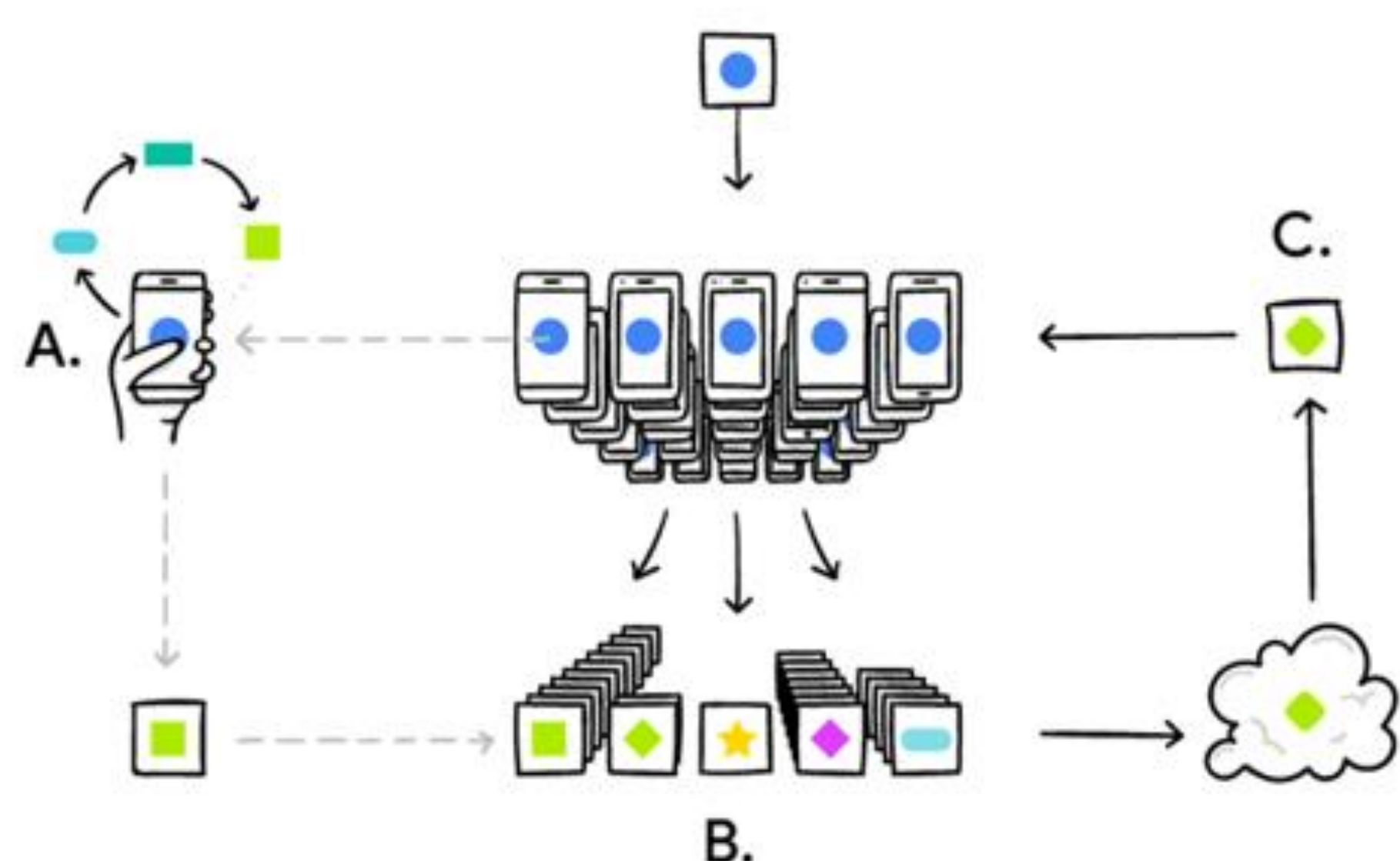


ABSTRACT

Our research explores the use of Federated Learning with knowledge distillation and a Variational Autoencoder to address privacy concerns in healthcare. We utilized the Flower framework to train our model on a dataset of CAT scans, which demonstrated the potential to achieve sustainable results on distributed networks of varying sizes, usage, and types. The combination of knowledge distillation and a Variational Autoencoder helped improve the performance of our Federated Learning model by transferring knowledge and addressing data heterogeneity, respectively. Overall, our progress has been promising and suggest that this approach could be used to address privacy concerns in healthcare and other applications with sensitive data.

METHODS

- Federated Learning using the Flower.Framework
- Knowledge Distillation using PyTorch
- Variational Autoencoder using PyTorch



Source: <https://ai.googleblog.com/2017/04/federated-learning-collaborative.html>

We propose a Federated model utilizing Flower, Knowledge Distillation, and an Autoencoder as a method of solving real-world data privacy issues in healthcare.

