Federated Learning: Privacy-Preserving Collaborative Machine Learning without Centralized Training Data
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Abstract:
Federated Learning is a machine learning setting where the goal is to train a high quality centralized model while training data remains distributed over a large number of clients each with unreliable and relatively slow network connections. We consider learning algorithms for this setting where on each round, each client independently computes an update to the current model based on its local data, and communicates this update to a central server, where the client-side updates are aggregated to compute a new global model.

In this talk, I will introduce the underlying algorithms, and present several ideas for improving the overall system in terms of communication efficiency, security, and differential privacy.

Bio:
Jakub Konečný is a research scientist at Google working on Federated Learning, an effort to decentralize machine learning. Prior to joining Google, Jakub completed his PhD at University of Edinburgh focusing on optimization algorithms for machine learning.