AI for Application Modernization

Enterprises who want to take advantage of the Cloud are struggling to modernize their legacy applications. These applications can be old enough that the original architects are no longer present with the company and there may be a limited documentation available. In this talk, I will discuss the application modernization process, and focus on two key areas where AI can play a significant role in transforming it. Firstly, the talk will address how AI can improve the application portfolio assessments, and automate recommendations for application modernization (e.g. containerize app, refactor app, etc.) by considering business, technical and operational properties of the application. Secondly, the talk will present an AI driven semi-automated utility for transforming JEE monoliths to microservices. The approach formalizes the concept of ‘data dependency’ graphs obtained from static code analysis. For a monolith, ML and DL are used on runtime traces corresponding to various use cases along with the data dependency graph to generate stateless microservices. The talk will also discuss research challenges in the application modernization domain.