Dynamic adaptivity of a computer system is its ability to modify the behavior according to the environment in which it is executed. It allows the system to achieve better performance, but usually requires specialized architecture and brings more complexity.

The thesis presents an analysis and design of a framework that allows simple and fluent performance-based adaptive development at the level of functions and methods. It closely examines the API requirements and possibilities of integrating such a framework into the Scala programming language using its advanced syntactical constructs. On theoretical level, it deals with the problem of selecting the most appropriate function to execute with given input based on measurements of previous executions.

In the provided framework implementation, the main stress is laid on modularity and extensibility, as many possible future extensions are outlined. The solution is evaluated on a variety of development scenarios, ranging from input adaptation of algorithms to environment adaptations of complex distributed computations in Apache Spark.