

KEA

Data design

Product description

The product is a platform for deploying, managing, and scaling machine learning models in production. It offers a secure, flexible environment for automating ML tasks like model versioning, routing, and monitoring. With Kubernetes integration and containerization support, it's designed for developers, ML engineers, and enterprises needing scalable, reliable ML infrastructure.

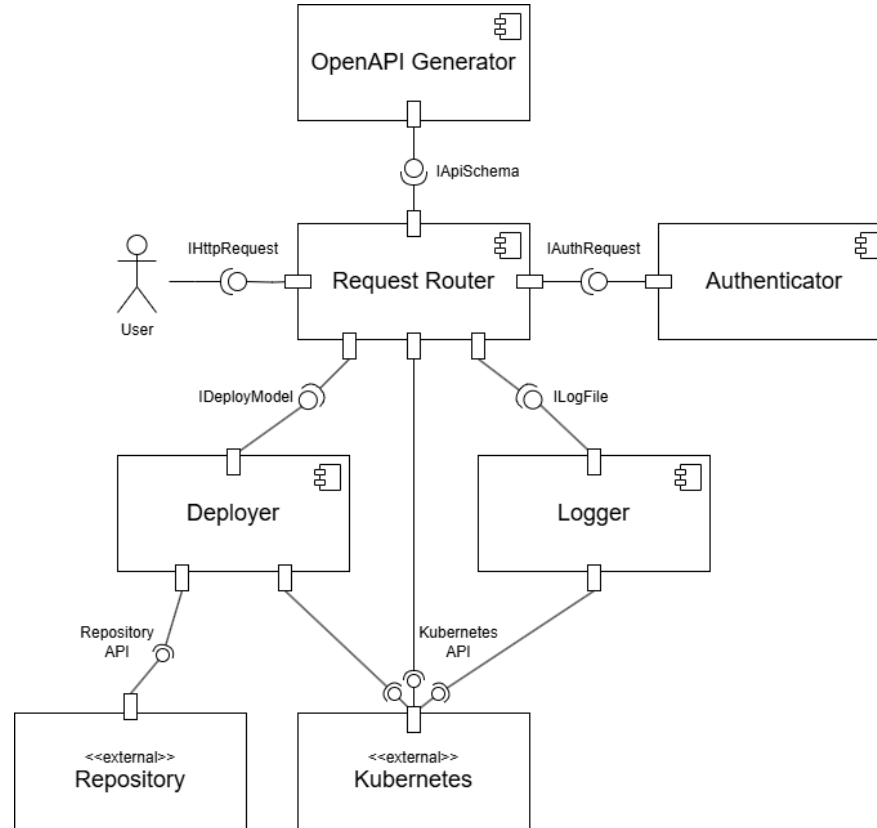
Team K8C: Tsurkan Daniel; Dandamaev Gadji; Tsaturyan Konstantin; Smolkin Mikhail

Project repo: <https://github.com/fanglores/Advanced-Software-Design>

This report: [https://github.com/fanglores/Advanced-Software-Design
/blob/master/Practice%20Tasks/Module2/Task 12/Task 12.pdf](https://github.com/fanglores/Advanced-Software-Design/blob/master/Practice%20Tasks/Module2/Task%2012/Task%2012.pdf)

System architecture

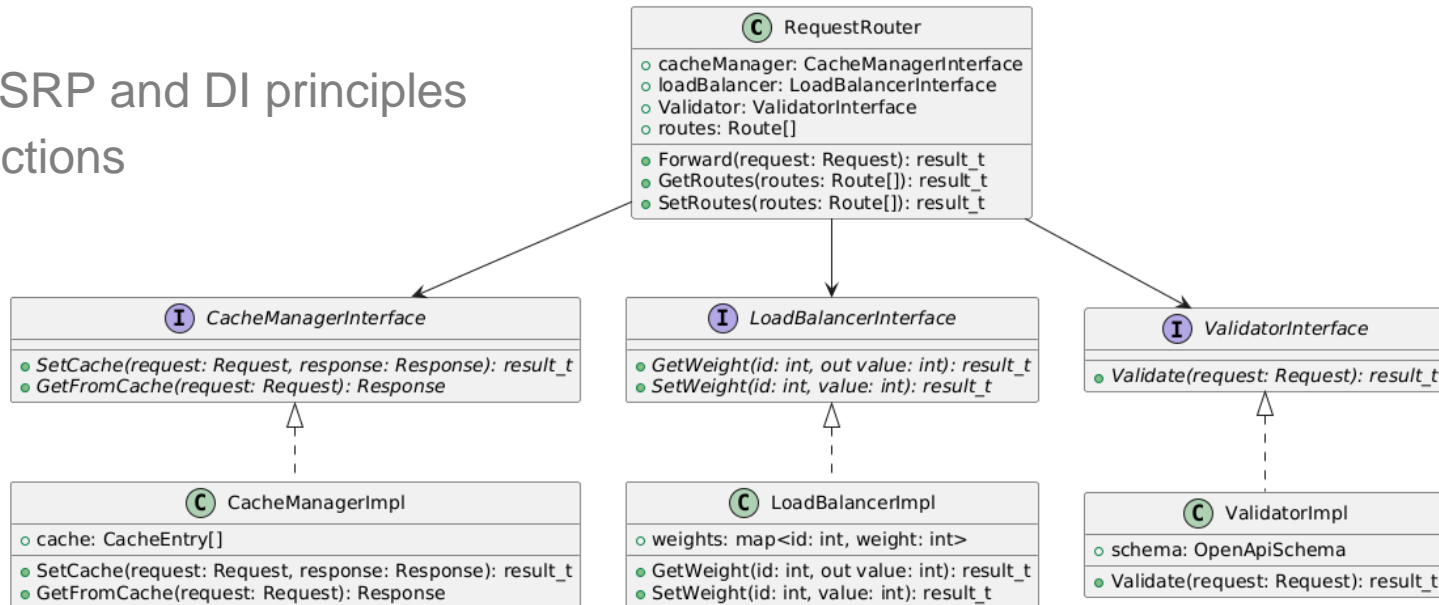
BASE
Microservices
RESTful API



Design case for RequestRouter

Problems: many functions for one class

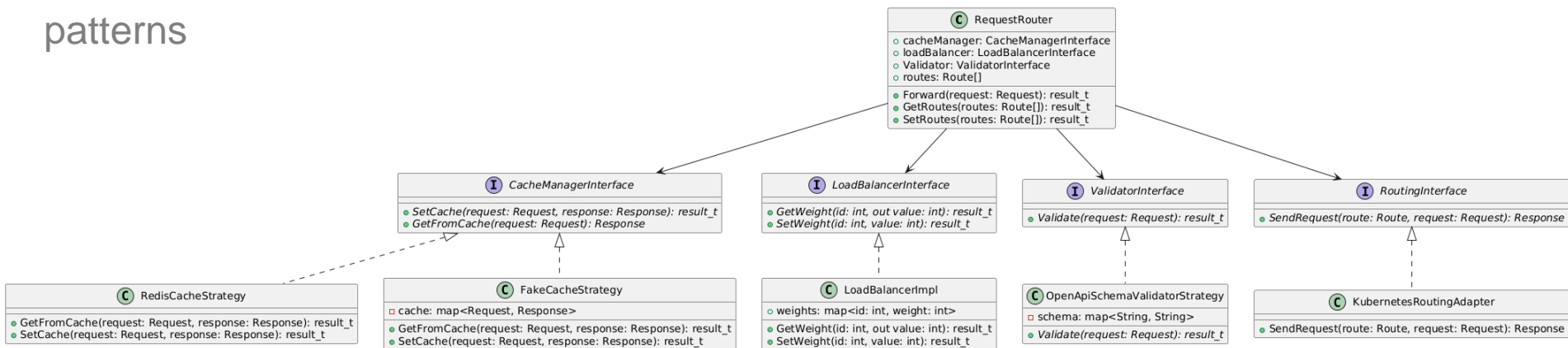
Solutions: use SRP and DI principles to delegate functions



Design case for RequestRouter

Problems: strong dependency on
Kubernetes, OpenAPI schemas,
cache storage

Solutions: use Strategy and Adapter
patterns

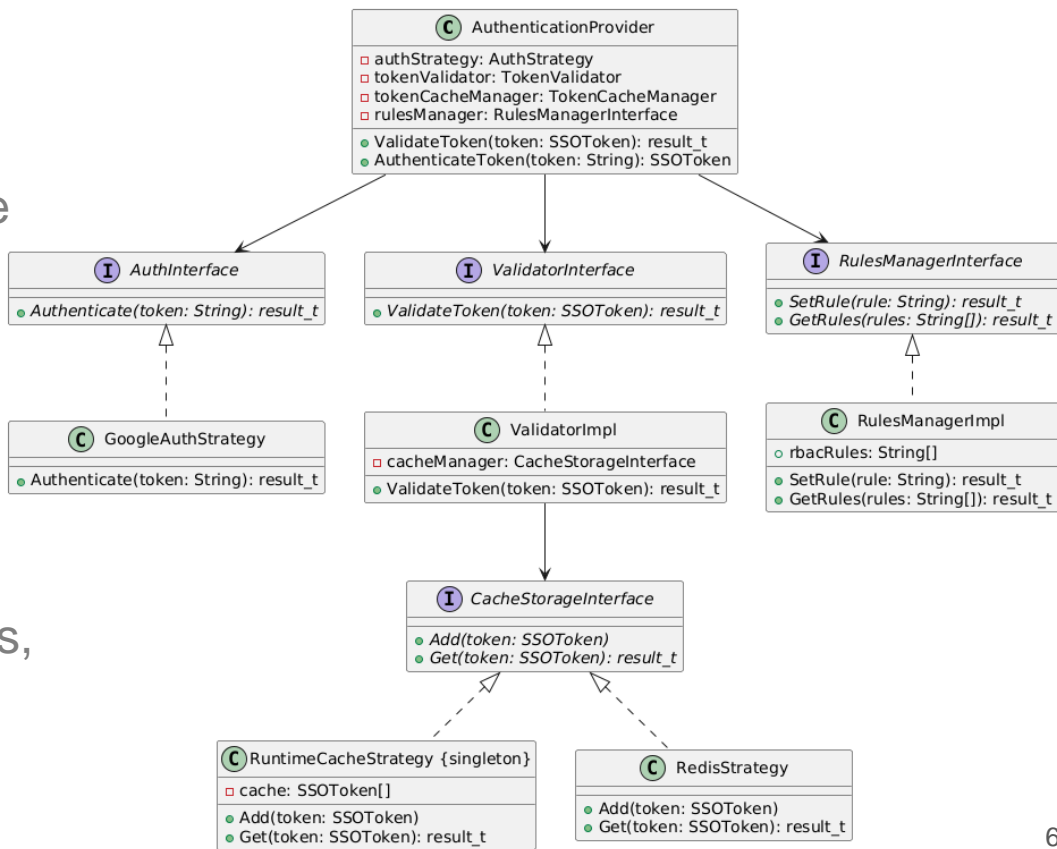


Design case for Authenticator

Problems: all auth processes are implemented in

AuthenticationProvider, new auth methods require changes in a base class

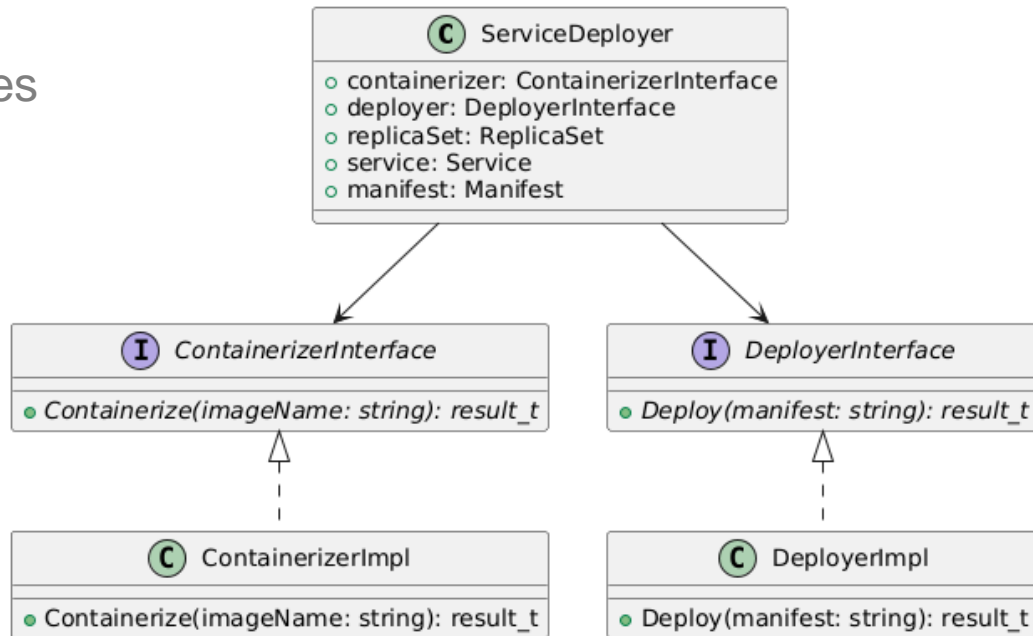
Solution: use SRP and DI principles, Strategy, Singleton patterns for separating different auth-protocols



Design case of Service Deployer

Problems: implements many functions

Solutions: use SRP and DI principles to delegate functions



Design case of Service Deployer

Problems: new deploy strategies
require changes in ServiceDeployer;
ServiceDeployer can work with
different data, repository or
orchestrator

Solutions: use DI principle, Adapter and
Strategy patterns

