

The Uni1 Immune System for Continuous Delivery

Summary

This thesis first creates a conceptual model of immune systems in continuous-delivery-based software development and then implements and evaluates an immune system for the Uni1 service.

Work Results

Bullet list of results (not process!). Looks like this:

- Literature review
 - Review of existing frameworks for immune systems for continuous delivery
 - **Resulting set of requirements (conceptual model) for immune systems**
- Development of a monitoring system for Uni1; a framework that supports
 - Provision of metric types (e.g. binary, threshold, within-band)
 - Registration of key metrics in dashboard
 - Definition (by hand) of key metrics
 - Visualization using a monitoring dashboard
- Development of an immune system for Uni1; dimensions may be
 - An architecture that supports multiple versions of same functionality in parallel
 - Incremental roll-out of new deployment to support “canary” testing
 - Automated monitoring to identify regression/worsening of system performance
 - Automated rollback in case of rejection of most recent deployment
- Thesis results
 - **Design and implementation, review of how well requirements were met**

Supervisor

Prof. Dr. Dirk Riehle, dirk.riehle@fau.de

Open Source Research Group
Computer Science Department
Friedrich-Alexander University