Theses

1. Crowdsourcing can successfully be applied in the context of Web Migration to conduct Reverse Engineering activities, and the qualification of crowd workers is sufficient when combined with suitable quality control and results aggregation techniques.
2. The Reverse Engineering activity of Concept Assignment can be integrated with ongoing development activities when facilitated through a platform for annotating legacy source code that is integrated with the surrounding development environment, and the resulting knowledge base can be represented in an interoperable and queryable way leveraging Semantic Web technologies.
3. Rapid Prototyping can successfully be transferred into the domain of Web Migration to create Web-based prototypes from legacy desktop application software, and the effort and expertise requirements can be reduced with suitable guidance and automation.
4. Reuse of legacy Business Logic in Web Migration Prototypes is achievable through a hybrid Web Application architecture leveraging WebAssembly and a supporting process and infrastructure for their creation and operation.
5. Grid-layout-based Web user interface prototypes can be created from pixel-based legacy desktop graphical user interfaces by realizing the layout mapping as optimization problem solved by an evolutionary algorithm and using suitable legacy parsers and Web layout generators.
6. Perceived similarity between legacy desktop application user interfaces and migrated Web-based versions of these user interfaces can be approximated through similarity computation based on objective distance-based measures and improved through calibration with a limited number of representative users.
7. User interface elements can be detected in screenshots of legacy and Web-based user interfaces using a computer-vision strategy to identify regions of interest and classify them, enabling automatic computation of element-dependent distance measures.