

Secure Software Engineering

Analyze/Classify/Summarize Best Practices

What:

- Software engineering approaches, that focus on producing secure (a.k.a. as few bugs as possible) code/software
- Especially important for safety- and security-critical applications (industrial, automotive, avionics...)
- Analyze state of the art (practical guides, certification standards, general approaches, supporting tools)
- Find invariants and recommend tools/general approaches
- Generate guide with absolute baseline techniques/tools/approaches for students

Skillset:

- Experience in commercial programming (a.k.a. programmed for food in a company in the past)

Module:

- SHK/WHK

Talk to: Tim Lackorzynski <tim.lackorzynski@tu-dresden.de>

Augmented Reality

Instrumentation of Microsoft HoloLens

What:

- Make yourself familiar with programming the Microsoft HoloLens AR system
- Create some Hello Worlds
- Implement a certain use case

Skillset:

- Experience in programming

Module:

- SHK/WHK

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Front End for App Shop Platform

Creation of a Web-based Front End

What:

- App Shops allow users to search for Apps and selectively load and install them
- Implement a graphical web-based front end, where users can get more info or press install/uninstall, start/stop app

Skillset:

- Web-based programming

Module:

- SHK/WHK

Talk to:

Tim Lackorzynski <tim.lackorzynski@tu-dresden.de>, Stefan Köpsell <stefan.koepsell@tu-dresden.de>, Hannes Weisbach <hannes.weisbach@tu-dresden.de>

Loading an App on App Shop Platform

Creation of an Web-based Front End (and Integration with Back End)

What:

- Load, check, start/stop, a VM (the app) on a hypervisor/VMM
- Design an abstract description for the app (Manifest file)
- Translate abstract description into concrete VM configuration (using libvirt)

Skillset:

- Experience in programming
- L4 μ kernel or Linux/KVM

Module:

- Master/Diplom

Talk to:

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