

We are seeking (*subject to the authorization of the respective external funds*)

Two Research Staff Members (Wissenschaftliche Mitarbeiter) to begin in January 2018

Area of Work: Security Architecture Framework for Unmanned Aerial Vehicles (UAV) with Focus on Inspections

National joined project with a leading MRO provider, a leading technology company and 3 academic partners

The Overview

The University of Applied Sciences Neu-Ulm (HNU) invites applications for 2 PhD student positions in Computer Science with particular focus on Security of Unmanned Aerial Vehicles (UAV). The students will work on the large interdisciplinary project “End-2-End Security for Drone-based Inspection of Industrial Objects” that involves two industrial and three academic partners. Students will be employed through HNU, while the PhD degree will be given from the Julius-Maximilians-Universität (JMU) of Würzburg. Students will be mainly based at the HNU campus in Neu-Ulm, however will be required to visit JMU campus in Würzburg (Chair of Software Engineering, System Security and Privacy Group, Prof. Dr.-Ing. Alexandra Dmitrienko) on a regular basis for PhD supervision.

The length of a PhD Program is typically 3-4 years. Positions provide support for 3 years, with the start in January 2018. The salary is according to TV-L E 13.

We are looking for highly motivated candidates who strive to earn a Doctoral Degree (PhD equivalent), and are willing to take the chance to shape and start up a completely new Industry in Germany.

The Opportunity: Being Part of a large Research Program

A coming larger interdisciplinary Research Program (roughly 6.000 man-days, 3 years runtime) will investigate how automated and autonomous drones can be used to improve inspection/ maintenance tasks in the Industry.

This Research Program focuses on improving Inspection-tasks in the Maintenance, Repair and Overhaul (MRO) Industry. The goal is to develop and investigate an End-2-End system-architecture of an autonomous Unmanned Aerial Vehicle for Inspections. The system inspects large objects and detects and qualifies damages on the inspected object.

The system will build on artificial intelligence/cognitive-systems that plans and executes the flight, gathers data in the inspection process - all autonomously. In a next step the gathered data will be further processed, analyzed and insights created. The architecture of the system will be relying on cloud based cognitive services.

The Job: Research on Security of Unmanned Aerial Vehicles

As a key part of the large Research Program there are 2 open Positions at HNU, each running a sub-project.

Sub-project: Prevention with security by design for Inspection specific UAV

Design & Implementation of a virtualized distributed cyber-physical system-architecture with mobile components. Focus is on virtualization and segregation of Aviation and Non-Aviation Software Components and the decomposition of security related services into cloud- and non-cloud components.

Sub-project: Detection/ Response and Post-Analysis for Inspection specific UAV

Design & Implementation of a Security Intelligence Architecture for Inspection specific UAV. Development & Evaluation of Distributed Software Architectures that allow for autonomous Intelligence as well as for Integration of Cloud based Security Intelligence.

Requirements

- A Master-Degree (that qualifies for starting a Doctoral/PhD Program) in Information Management, Computer Science, Software Engineering, Electrical Engineering, IT-Security Engineering, Communication Engineering or similar
- Good Programming Skills
- Knowledge in Distributed Systems/Internet of Things is a plus
- Strong Interest in working in a large scale interdisciplinary project with Project-Partners from Industry and Academia based in Hamburg, Frankfurt, Munich and Neu-Ulm
- Strong Interest in becoming a security expert
- Strong Interest in Unmanned Aerial Systems (Drones)
- Strong Interest in international scientific work and publications of results

The position is full-time on a fixed-term contract for three years. The salary is based on the German tariff scales (TV-L 13 – for details, please see <http://oeffentlicher-dienst.info/c/t/rechner/tv-l/west?id=tv-l-2017>).

The HNU welcomes applications from all suitably qualified members of the community. Those applicants with a disability will be considered preferentially in the case of equal aptitude. Part-time employment is generally possible, as long as a job-sharing model can be applied to cover for a full position.

If you are interested in this position, and have the skills and experience we are looking for, please apply by email to personal@hs-neu-ulm.de and include your CV, transcripts and any reference letters you have (Reference Number 2017.15)

Closing date for applications is 27.11.2017.

Please address questions to Prof. Dr.-Ing. Christian Bachmeir (christian.bachmeir@hs-neu-ulm.de) or Prof. Dr.-Ing. Alexandra Dmitrienko (alexandra.dmitrienko@uni-wuerzburg.de)