

Centre for Advances in Reliability and Safety Limited (CAiRS), initiated by The Hong Kong Polytechnic University, is established in 2020 with its operation located in the Hong Kong Science Park, New Territories, Hong Kong. The mission of CAiRS is to bridge academic and industrial counterparts to introduce and implement artificial intelligence methods and prognostic techniques to advance reliability and safety. The goal of the Centre is to improve reliability and safety of critical components and devices, products, systems and sub-systems designed, commissioned and/or manufactured by Hong Kong companies and enterprises. More information about the company can be found at <http://www.cairs.hk>.

- (1) **Postdoctoral Fellow** (Ref. No.: CAiRS-R13/P4.1 - Functional safety improvement through expanded diagnostic coverage and Reduction in testing effort)  
**[Appointment period: thirty-six months]**
- (2) **Research Associate** (Ref. No.: CAiRS-R14/P4.1 - Functional safety improvement through expanded diagnostic coverage and Reduction in testing effort)  
**[Appointment period: thirty-six months]**

### **Duties**

The appointees will assist the Project Leader and Programme Manager in using deep learning methods for products in production to identify probable failure modes in advance based on physics of failure.

The **Postdoctoral Fellow** appointee will be required to:

- a. conduct studies of international standards, publications, and patents to support the design and implementation of project;
- b. conceptualize, plan and conduct research activities to achieve project deliverables;
- c. develop innovative methodology based on sensors, including machine/deep learning models for industrial application;
- d. work with team of researchers to conduct research, experiments, and report;
- e. write and publish articles in high-tier peer-reviewed journals; and
- f. perform any other duties as assigned by the Centre Director or his delegates.

The **Research Associate** appointee will be required to:

- a. conduct research to address industrial reliability and safety issue of product, process and system.
- b. develop innovative methodology based on sensors, including machine/deep learning models for industrial application.
- c. conduct research, experiments, and report/paper publications as assigned by Centre director or his delegates.
- d. perform any other duties as assigned by the Centre Director or his delegates.

### **Qualifications**

- **Postdoctoral Fellow:** Doctoral degree holder in Computer Science, Information Engineering, Mechanical Engineering, Material Science, Physics, Mathematics, or relevant disciplines.
- **Research Associate:** Master's degree holder in Computer Science, Information Engineering, Mechanical Engineering, Material Science, Physics, Mathematics, or relevant disciplines.
- Professional background or experience with high competency in least one of the following areas:
  - I. Machine-learning/ data sciences related projects

- II. Programming: Python, familiarity with open-source libraries including Tensorflow is a plus
- III. Mechanical design and testing
- IV. Modelling and simulation
- V. Product reliability
- VI. Material analysis

- Team player with good analytical and communication skills
- Good command of written and spoken English

Fresh graduates are also welcome.

Applicants are invited to contact Dr Steven T. Boles at email [steven.t.boles@polyu.edu.hk](mailto:steven.t.boles@polyu.edu.hk) for further information.

### **Remuneration**

A highly competitive remuneration package will be offered. Applicants should state their current and expected salary in the application.

### **Application**

Please send a completed application form, together with a detailed curriculum vitae via email to [careers@cairs.hk](mailto:careers@cairs.hk)

Feb 2022

**Deadline for application: Recruitment will continue until the positions are filled.**