

Johnston Sweepers Limited / Bucher Municipal

Job Description

Job Title:	KTP Associate – Autonomous Control System (Smart Sweeping)
Reporting To:	Innovation & Simulation Manager
Reporting to Job Holder:	Gareth Knopp
Department:	Engineering
Location:	Dorking, Surrey, RH4 1HF
Hours:	37.5 hours per week flexible (09:00 – 16:00 core hours)
Duration:	Fixed Term Contract up to 30 months
Salary	Grade 9/10 Salary Range £35,845 - £44,045 (The point of entry will be dependent upon relevant qualifications and experience)

Summary

- Supported by the Innovation & Simulation Manager & Systems Engineering Manager, this role involves all matters involved in the implementation of a system which can automate the sweeping functions of a truck mounted sweeper from the Bucher Municipal range of road sweeping machines. Specifically the aspect of Deep Learning around image processing and recognition to be able to automate vehicle functions to optimise the sweeping systems.
- This role has responsibility of software design for the automation of functions, liaising with the systems engineering team to develop communication over a company specific CAN Open implementation to a new schema of messages.
- The associate will need to ensure that any control software is fully tested and approved, meeting relevant standards using a defined release process, and that software release schedules are clearly defined internally and externally to Engineering.
- The role also involves collaborating with the Mechatronic Engineers to develop control software and system models of the machine.
- The associate would work along with the academic supervisor in developing simulation and AI systems.

Key Responsibilities and Tasks

- Plan & Manage the overall KTP project, including; detail project planning of individual sections to ensure delivery of a successful KTP.
- Create new CNN & Deep Learning systems in software packages such as MATLAB/simulink Deep learning Toolbox, Using editors such as Jupyter notebook, Google Co-lab, OpenCv, utilising Deep Learning Frameworks (YoLo), Tensorflow, Keras etc.
- Test & validation of the software on the bench and on a real world prototype vehicle.
- To work along with the academic and engineers, towards the specification of a suitable microcomputer platform.
- Creation of code and systems to operate on a microcomputer platform with associated sensors.

- Ensure that the software written is compatible with our progress toward smart products connected by telematics to enhance the product and service offering of the company.
- Design and validation of electrical and electronic sensors required for the application, working with new & existing suppliers.
- Monitor continuously the cost effectiveness of designs and components to ensure that within the constraints of technical excellence and machine longevity, direct costs are minimised.
- Liaise regularly and effectively with other members of the engineering team to ensure a cohesive overall design.
- This is a clearly defined project role, but at any time there may be other duties which may reasonably be required.

General Terms

- As per your offer letter of employment, any subsequent correspondence and the statement of particulars.
- In line with the Harper Adams University & Johnston Sweepers Ltd company handbooks.

Person Specification

Listed below are the key requirements needed to undertake this job.

Candidates will be assessed against these criteria.

Criteria	Essential / Desirable	Assessment Stage / Method
Skills & Abilities		
A knowledge of engineering-electronics, computer engineering and a basic knowledge of microcontroller applications.	Essential	CV/Interview
Be able to demonstrate an excellent knowledge of modelling systems using tools such as Siemens AMESIM, or MATLAB & its different toolboxes, e.g. deep learning, Simulink,	Essential	CV/Interview
Be proficient in the use of editors such as Jupyter notebook, Google Co-lab, Anaconda, Spyder, or others (language dependant)	Desirable	CV/Interview
Aware of the different types of frameworks for Computer vision and Deep learning, such as OpenCV, (YoLoV3 / mini), Tensorflow, Keras etc.	Essential	CV/Interview
Be able to demonstrate an understanding of CAN-based control systems and software, including sensors.	Essential	CV/Interview
A willingness to learn & apply AI techniques, from the lengthy aspect of teaching, to the application and assessment of different approaches.	Essential	Interview
Ability to demonstrate a sound understanding of automotive electrical engineering.	Desirable	CV/Interview
Conversant with mobile hydraulics.	Desirable	CV/Interview

Conversant with mobile pneumatics.	Desirable	CV/Interview
Project Management Skills	Desirable	CV/Interview
Qualifications & Training		
Formal qualifications in software engineering / Software architecture Degree Level or equivalent engineering subject	Essential	CV
Personal Qualities		
Ability to both work alone, and with supervision from a distance. – i.e. University academic located some distance away from place of work.	Essential	Interview/CV
Ability to self-learn, ask for help, and liaise with colleagues	Essential	Interview
Demonstrate an ability to work within multi-disciplined teams	Essential	Interview
Excellent communication skills both oral and written. An interest in dissemination of information and experience of writing reports & giving presentations	Essential	Interview
Valid current UK driving license holder	Desirable	CV
Willingness to travel within the UK & overseas to attend seminars and events	Essential	Interview
Potential for growth	Essential	Interview

If you have any queries or questions or for an informal discussion please contact: Academic KTP Supervisor, Mr. Sam Wane: swane@harper-adams.ac.uk

For further information about the University please visit our website at www.harper-adams.ac.uk

Application Procedure:

All applications should be completed and submitted using the Harper Adams e-Recruitment programme at <http://jobs.harper-adams.ac.uk> **to be completed no later than midnight on 11th October 2020.**

This post is unlikely to meet the relevant criteria to allow the University to issue a Certificate of Sponsorship. Applications from candidates who require a Certificate of Sponsorship to work in the UK will be considered against the requirements stated in the recruitment documentation. Recruitment decisions will be made in accordance with the UK Visas and Immigration