

Software Engineer - AI/Machine Learning

Part to Full Time / Work from Home

Are you an experienced software engineer with proven ability to produce trained models with exceptional precision and recall? Are you passionate about the use of artificial intelligence in the field of imagery to detect anomalies and defects? Does your skillset include the use of AI/Machine Learning in the cloud, Google cloud storage, developing in C# and/or vb.net, and the integration of automation processes into existing products? Can you solve complex issues by writing code in several languages? You have excellent written and spoken English skills, and the ability to work autonomously. Preferably you have a background in road defect analysis and/or civil engineering. Ticking all the boxes...then SHEPHERD has the career opportunity for you.

Join the SHEPHERD Team

SHEPHERD is offering an exciting opportunity to work with a highly motivated and innovative team of asset management engineers to enhance our unique Road Asset Condition Assessment System ([RACAS](#)) by automating defect assessment and asset identification. You will train and test models consuming imagery from our extensive database of road defects captured by RACAS.

As well as demonstrating technical expertise, the successful applicant will reflect SHEPHERD's values of respect, teamwork, positivity, excellence, innovation, and work life balance.

SHEPHERD offers excellent work life balance including the flexibility of working from home and a choice of full or part-time hours. The annual full-time base salary range is \$78K to \$93K including super and working from home allowances, depending on level of skill and experience. However, higher rates can be negotiated for exceptional applicants. Tertiary qualifications in software engineering and/or systems are desirable and/or 3+ years relevant working experience. Class C drivers licence required.

Full Position Description attached.

Interested? Send us your covering letter and CV to apply.

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Position Description

Position Title	Software Engineer – AI/Machine Learning		
Position Tenure	Part to Full Time	Reports To	RACAS Manager
Last Updated	February 2021	Base Location	Negotiable

Section 1: Organisation Summary

For over 20 years Shepherd Services Pty Ltd have assisted local governments across Australia by offering integrated and specialist products and services across eight key areas. These include Asset Management Services, GIS, Road Asset Condition Assessment (RACAS), Valuations, Roads Maintenance Management Systems, Project Management Services, Flood Restoration, and a variety of training services.

Section 2: Position Summary

This position plays an essential role in the ongoing Research and Development of SHEPHERD products, namely its Road Asset Condition Assessment System ([RACAS](#)). The Software Engineer is responsible for successfully integrating the use of AI/Machine Learning to automate defect assessment and asset identification processes using RACAS imagery. As well as the integration of automation processes into existing products.

Section 3: Key Working Relationships

Internal	External
Company Directors	Technical Partners
Administrative Staff	Local Government Engineers
Field Staff	Third Party Software Providers

Section 4. Key Result Areas

Area	Behavioral Descriptors	KPI
Software Engineering		
Produce trained AI/Machine Learning models with excellent precision and recall	<ul style="list-style-type: none"> Automatically and accurately identify specified road surface defects from RACAS data capture. 	<ul style="list-style-type: none"> Integrate AI/Machine Learning processes into existing products.
Automate defect assessment process with high level of accuracy	<ul style="list-style-type: none"> Identify defects in each image that are defined and quantified in accordance with condition defect criteria. 	<ul style="list-style-type: none"> Achieve 90% accuracy for defect identification.



Area	Behavioral Descriptors	KPI
Batch processing of images stored in the cloud	<ul style="list-style-type: none"> Produce trained models to process extensive database of images stored in the cloud. 	<ul style="list-style-type: none"> Timely and efficient batch processing of images.
Solve complex software problems	<ul style="list-style-type: none"> Ability to write code in several languages as required to solve complex issues as they arise. 	<ul style="list-style-type: none"> Efficient and effective problem solving.
Contribute to the continuous improvement of SHEPHERD products	<ul style="list-style-type: none"> Recommend and develop software design concepts to enhance the end-user experience. Troubleshoot and continuously improve existing systems. 	<ul style="list-style-type: none"> Implement software solutions to meet the changing needs of our clients and enhance the usability of our products.
Ensure quality control and oversight of model outputs	<ul style="list-style-type: none"> Design and implement quality control processes. 	<ul style="list-style-type: none"> Documented quality control processes.
General		
Quick Learner	<ul style="list-style-type: none"> Ability to learn new processes and technology quickly and effectively. Employ effective learning skills (e.g., note-taking, video training). 	<ul style="list-style-type: none"> Acquire new skills on-the-job with minimum training.
Effective Communication	<ul style="list-style-type: none"> Ability to clearly communicate in written and spoken presentations. 	<ul style="list-style-type: none"> Clear and concise written reports and verbal presentations.
Effective Time Management	<ul style="list-style-type: none"> Ability to effectively schedule and prioritise time to achieve assigned projects. Ability to manage a minimum of three projects at any one time. 	<ul style="list-style-type: none"> Working month, week and day planned to use available time effectively.
Manage Assigned Projects	<ul style="list-style-type: none"> Follow and support shared internal procedures relating to project management including but not limited to pre-execution, progress updates/reporting to clients and key SHEPHERD Staff, close 	<ul style="list-style-type: none"> Projects managed strongly and successfully in a timely way.



Area	Behavioral Descriptors	KPI
	out etc.	
Complete other general technical works	<ul style="list-style-type: none"> Partner as necessary. 	<ul style="list-style-type: none"> As required.
Attend all staff meetings and workshops	<ul style="list-style-type: none"> Make regular positive contributions. 	<ul style="list-style-type: none"> Meeting/workshops attended. Positive participation is evident.
Maintain strong accountability when working alone.	<ul style="list-style-type: none"> Teams title bar is updated. 	<ul style="list-style-type: none"> Whereabouts and availability are always communicated across the staff group.
Attend weekly project meetings as scheduled.	<ul style="list-style-type: none"> Ensure project status is updated and communicated to Project Delivery Manager. All project updated (GANTT) via Smartsheet. 	<ul style="list-style-type: none"> Accuracy assured. Partnering with the Project Delivery Manager is apparent. Project status is clear.
Capture Billable Hours	<ul style="list-style-type: none"> Accurately record billable hours. 	<ul style="list-style-type: none"> All billable hours captured. All time allocated to projects is captured, is accurate and is efficient. Billable targets met.
Put safety first on all occasions.	<ul style="list-style-type: none"> Take active steps to ensure personal safety and the safety of others. Record incidences and near misses in a timely way. 	<ul style="list-style-type: none"> It is evident that all actions are undertaken with safety in mind. Guidelines/policies and procedures followed and championed.
Lead Strongly	<ul style="list-style-type: none"> Is available, responsive, and accountable. Models the Code of Conduct and Values and empower others to do the same. 	<ul style="list-style-type: none"> Evidence of leading by example is apparent. Evidence of being available, responsible, and accountable is apparent. Behaviour aligns with SHEPHERD Code of Conduct and Values.



Qualifications / Skills / Experience Essential to The Role

Required

- Minimum 3 years' experience in AI/Machine Learning Development.
- Development experience in C# and/or vb.NET.
- Demonstrated experience in producing trained models with excellent precision and recall.
- Ability to solve complex issues by writing code in a number of languages.
- Experience using AI/Machine Learning in the cloud and Google cloud storage .
- Experience with AI/Machine Learning using imagery and detecting defects.
- Ability to develop automation processes for existing products.
- Ability to complete projects within agreed timeframes.
- Excellent written and spoken English communication skills.
- Experience working unsupervised.
- Ability to work collaboratively with people from operational to management levels.
- Valid class C drivers licence.

Desired

- Bachelor Degree in Engineering – Systems / Software Engineering
- Experience in mapping and mapping controls.

Note:

From time to time you may be asked to undertake engineering, general technical or governance related tasks not listed in this document.

END