Job Description

Job Title	Computer Vision Specialist	Division	Business Technology
Department	Digital & Technology Delivery		
Reports to	Computer Vision Manager	Location	Viaduct Harbour

Key Purpose

To deliver high quality video analytics for the transport network and assets at Auckland Transport (AT), Auckland Council, NZ Transport Agency and NZ Police.

To provide knowledge and expertise for AT in this domain through analysis, creation and delivery of all video analytics.

To work in conjunction with project teams to deliver fit for purpose high quality video analytics that integrate with our Smart City Intelligent Operations work. This includes supporting the video analytics solution with system administration, configuration, upgrading and troubleshooting.

To collaborate with key internal and external stakeholders to be an enabler of exceptional customer experience and transport outcomes supporting the AT strategic objectives of delivering safety and customer centricity in our services.

Key Responsibilities	Expected Outcomes
Video Analytics Expertise • Provide the knowledge and expertise about the techniques and strategies that work best for AT in the domain. • Attend project meetings, provide technical advice, assistance in business case development, site visits and implementation planning. • Provide algorithms and logical solutions to achieve new types of video analytics. • Review vendor analytics tools to ensure the features and functionalities meet the requirements and visions of AT. • Keep abreast of developments in the video analytics sector to ensure AT are utilising the best technologies. • Share knowledge base with the team in regards to video analytics. • Support training for new team members.	• Video analytics deliverables meet the needs of business stakeholders, legislation, policies, standards, and best practices. • Technology and methods applied for video analytics reflect technological trends and bestpractice as well as the needs of the business. • Project teams are well supported with technical expertise and planning. • Policies, procedures and standards are up-to-date and adhered to. • Accurate and timely advice provided. • Appropriate and timely escalation of any identified issues. • Computer Vision Specialists are trained on the latest technology

Key Responsibilities	Expected Outcomes
Video Analytics Build, Test, Implement • Build, test and implement alert-driven and data-driven video analytics to meet business requirements in line with the video analytics process: build, refine, peer-review, UAT, productionise and support. • Optimise all the factors of video analytics including camera type selection, camera position, angle adjustment, camera fine tuning, network optimisation, analytics logic design, scene analysis parameters optimization, event stream processing, integration with external systems, and sufficient system training.	• High quality video analytics are delivered as per business requirements and within required timeframes. • Data from video analytics is being surfaced to agreed platforms in a timely manner and is accurate in line with business requirements. • Alerts for video analytics and incidents are presented to operators in a timely manner and are accurate in line with specific business requirements.
Video Analytics Support • Work collaboratively with teams such as the CCTV Support personnel both within AT and 3rd party providers. • Work collaboratively with teams to develop a long-term business support model for video analytics, including automation tools where required. • Support operator training, camera fine tuning, video analytics changing or updating, and trouble-shooting as required. • Support VMS system upgrades and any subsequent analytics testing required to ensure analytics are working appropriately. • Refine or re-build video analytics as required due to a change in camera view, camera moves, or camera replacement. • Perform System Administration tasks on the video analytics systems and software as required.	• Video analytics issues are resolved in a timely manner. • Video analytics in the production environment continue to work as expected after any change to cameras or the environment. • Video analytics systems and software is configured accurately.
Process and System Improvement • Identify and recommend opportunities for process and systems improvement. Work with the team and relevant parties to develop and execute improvements. • Review, develop and report on improvement initiatives for all systems and processes relating to specific area of expertise. • Keep current with trends and issues related to CCTV, Computer Vision and other digital technologies, adapting and transforming the business's digital processes and technologies to support strategic objectives.	• Processes and systems reflect best practice. • Excellent outcomes are achieved for customers. • All video analytics are developed in a timely manner
Relationship Management • Ensure a high degree of teamwork and collaboration with all relevant internal and external stakeholders. • Continuously deliver a high level of customer service.	• Key stakeholders report highly constructive and collaborative working relationships, particularly in relation to issue resolution. • Key stakeholders are engaged and aligned with organisational priorities and eager to collaborate.

Key Responsibilities	Expected Outcomes
Organisational Obligations • Promote activities and initiatives that assist in achieving the AT vision and mission. • Be familiar with and comply with all organisational policies. • Action AT's good employer obligations including equal employment opportunities and diversity policies and practices. • Support AT's commitment to Te Tiriti o Waitangi/The Treaty of Waitangi. • Be involved with Civil Defence Emergency Management as required.	• Individual actions and behaviours are aligned with the strategic direction of AT and are compliant with all organisational policies. • Individual role in engaging with Māori is understood and awareness of responsibilities is demonstrated in relation to Te Tiriti o Waitangi/The Treaty of Waitangi.

Health & Safety Accountabilities	
Health & Safety is a key accountability of all Auckland Transport staff. All AT employees will contribute in the following ways:	
Safety Leadership	• Be familiar with, and give effect to, AT's safety management system and associated policies and procedures to enable all employees to carry out their roles reliably, safely and effectively and to ensure the safety of employees, contractors, customers and the public. • Adhere to safety performance requirements and expectations. • Evaluate and continuously improve safety performance. • Take reasonable care of personal Health & Safety at work. • Take reasonable care that individual actions promote, and do not adversely affect, the Health & Safety of others.
Safety Culture	• Actively promote a strong safety culture. • Promote strong workplace risk awareness. • Be actively engaged in the workplace promoting safe behaviours and practices. • Engage in continuous safety improvement.

Minimum Requirements	
Qualifications	• Degree in Computer Vision, Image Processing, Pattern Recognition, Artificial Intelligence, Machine Learning, Data Science, or equivalent.
Experience	• 5-7 years' enterprise experience in Intelligent Transportation Systems (ITS) related Intelligent Video Surveillance (IVS) & Video Analytics (VA), including design, develop, refine, UAT, productionize and deliver. • 5-7 years enterprise experience in CCTV related area including CCTV system design, infrastructure, network, Video Management System (VMS), camera types and camera settings, camera operation, etc. • Experience and comprehensive understanding of cutting-edge video analytics technologies and Computer Vision algorithms and applications from basic motion detection to more advanced capabilities such as tracking, counting, anomaly detection, complex behavioural analysis, travel time measuring and prediction, congestion analysis, smart intersection, illegal parking, wrong way driving, red light runner, Automatic Number Plate Recognition (ANPR), object classification and recognition, etc. • Experience in non-traffic scene analytics use cases such as abandoned object detection, after hour movement, Graffiti and vandalism, abnormal behaviour analysis, etc. • Experience in Micro Focus IDOL and Media Server video analytics preferred. • Business intelligence, data warehouse and machine learning background, especially the column-based database experience. Experience in Vertica, SQL, and PowerBI would be advantageous. • Big data experience, in particular massive video management and processing, unstructured Metadata retrieve and analysis. • Experience in video analytics optimisation or other architectures would be advantageous. • Experience in both edge-based and server-based video analytics. • Experience working in an Agile environment.
Skills / Competencies	• Motivated and passionate about new technologies and willing to take on challenges • Ability to manage multiple and conflicting priorities in a fast paced environment and meet strict deadlines. • High level interpersonal skills including developing and maintaining strong professional working relationships with multiple teams and business stakeholders. • Ability to package and communicate highly technical concepts to both technical and non-technical audiences. • High level of research and analysis abilities, able to provide sound recommendations to project managers and business owners. • Excellent critical thinking, problem discovering and solving skills, especially trouble-shooting abilities. • Software development skills, fluency in a high-level modelling language such as MATLABor Python. Fluency in a low-level language such as Java or C++/C#. • Excellent verbal and written communications skills • Strong attention to detail. • Driven to achieve outcomes, delegates effectively and empowers others to use all resources to achieve the best outcomes.

Key Relationships	
Direct Reports	• Nil
Indirect Reports	• Nil
Internal	• Across AT
External	• Auckland Council and other CCOs • NZ Transport Agency • External partners e.g. NZ Police • General public • Developers and Consultants

Budgeted Authorities	
Budgeted	• Opex - As per delegations register • Capex - As per delegations register
Unbudgeted	• Opex - As per delegations register • Capex - As per delegations register

Risk/Hazard Categories
• VDU / Workstation set up (for example Hot desk requirements)

Safety Sensitive role?
No

Note
The above statements are intended to describe the general nature of this position. This is not an exhaustive list of all responsibilities, duties, or skills required.

Approval

Reviewed by:	C&T Business Partner	Date:	27/11/2019
Line Manager:	GM Digital & Technology Delivery	Date:	27/11/2019