9 Light Square
Adelaide, SA 5000

Computer Vision Engineer

Location: Adelaide, Australia (On-Site)
Employment Type: Full-time
Department: Engineering

About Paladin Space

At Paladin Space, we are pioneering the world's first reusable space debris removal system – creating technology that safeguards Low Earth Orbit and enables a sustainable future in space as the industry grows. Our mission is to clean, reuse, and protect the near-Earth environment for customers across the commercial, defence and government industries.

Our team core values include tenacity, curiosity, and creativity – which are especially important when we're tackling the hardest problems in space. We enjoy building new technology by designing, assembling, testing, failing, iterating and succeeding at a rapid pace, while having fun along the way. As a result, we also value proactivity and efficiency, executing our mission with purpose and precision. And above all, we believe in synergy: collaboration across every technical, legal, and business domains to deliver impact that extends beyond Earth.

If you want to apply your technical expertise to one of the most meaningful challenges in the space industry (and see your algorithms drive real spacecraft in orbit) this is your opportunity to make a lasting impact.

Job Overview

We are seeking a Senior Computer Vision Engineer to lead the development of advanced vision and perception algorithms for Paladin's autonomous space debris capture and navigation systems.

In this role, you will be responsible for the design, implementation, and deployment of computer vision and machine learning pipelines that operate in dynamic, unstructured orbital environments. You will develop algorithms for object detection, tracking, pose estimation, and visual odometry, leveraging both traditional and modern event-based vision techniques.

This is a hands-on, high-impact position that sits at the core of Paladin's mission. You'll collaborate with multidisciplinary teams (software and hardware) to bring perception systems from simulation to real-world flight testing. You'll also help define the company's long-term computer vision architecture, mentor junior engineers, and set technical direction in a rapidly evolving domain.

As a growing startup, Paladin Space offers a modest base salary with participation in our Employee Share Scheme, providing long-term value as the company grows

Key Responsibilities

- Design, develop, and optimise computer vision and perception algorithms for in-orbit object characterisation – determining attributes such as classification, shape, size, spin-rate and other data like material type.
- Develop computer vision algorithms that could be used for guidance and navigation towards the necessary debris targets.
- Implement and evaluate machine learning and event-based vision models for dynamic space environments, using novel sensors like event-based sensors.
- Lead integration of vision systems with onboard software, sensor hardware, and sensor fusion frameworks.
- Develop and maintain simulation environments and test datasets for algorithm validation.
- Conduct real-time processing, latency optimisation, and hardware acceleration for embedded platforms.
- Collaborate closely with systems, software, and electronics teams to ensure robust hardware/software integration in a test environment .
- Drive data collection and labeling strategies for simulation and field testing.
- Participate in design reviews, performance benchmarking, and mission readiness testing.
- Mentor junior engineers, champion best practices, and contribute to Paladin's growing AI and perception capabilities.

Required Skills & Experience

- Bachelor's, Master's, or PhD in Computer Science, Robotics, Electrical Engineering, or a related field.
- 2+ years of experience developing computer vision or machine learning systems, ideally in robotics, aerospace, or autonomous vehicles.
- Proven track record of deploying real-time perception algorithms on embedded or constrained hardware.
- Strong proficiency in Python and C++, with experience in frameworks such as OpenCV, PyTorch, TensorFlow, and/or ROS.
- Deep understanding of 3D geometry, SLAM, pose estimation, visual odometry, and sensor fusion.

- Familiarity with hardware acceleration (CUDA, TensorRT, or FPGA-based inference).
- Experience in testing, simulation, and algorithm verification, including dataset creation and performance benchmarking.
- Strong understanding of data structures, numerical methods, and software optimisation for embedded deployment.
- Excellent communication skills and the ability to collaborate in multidisciplinary teams.
- A proactive, hands-on mindset aligned with the fast-paced nature of a startup environment.

Bonus Skills (Highly Valued)

- Experience with event-based cameras, asynchronous vision, or neuromorphic sensing systems.
- Knowledge of multi-sensor fusion (e.g., combining vision, LiDAR, IMU, or radar data). Experience with grant and government funding programs (e.g., CRC-P, IGP, or Defence innovation initiatives).
- Familiarity with flight software architectures and real-time operating systems (RTOS).
- Experience with synthetic data generation, simulation frameworks, or reinforcement learning.
- Understanding of radiation-tolerant or space-qualified computing hardware.

Why Join Paladin Space

At Paladin Space, you'll be part of a team redefining what's possible in orbital robotics. You'll have direct influence over the algorithms that make autonomous debris removal achievable – and see your work go from concept to orbit.

We're a mission-driven team that values curiosity, creativity, and execution. Here, your ideas matter, your code flies, and your work contributes directly to protecting the future of space operations.

If you're ready to apply your expertise to a world-first mission and help shape the frontier of autonomous space robotics – join us and make your mark in orbit.