BLACKSWAN SPACE

Computer Vision Engineer

Blackswan Space is making satellites autonomous – a cornerstone for enabling the future space economy as space traffic rapidly increases. With the help of the European Space Agency, our team is developing a novel product for spacecraft relative navigation while leveraging computer vision and neural networks – the RPO Kit.

We are looking for naturally curious minds with a can-do practical attitude eager to satisfy their inner astronaut.

If you're keen on harnessing the current advancements in computer vision, navigation in space and embedded systems to solve open problems in spacecraft relative navigation, while also having a knack for working with flight hardware, we would love to hear from you !

Job Description

As an instrumental part of our engineering team, you will:

- **Algorithm Development:** Develop, test, and optimize robust computer vision algorithms, namely **pose estimation**.
- **Simulation & Modeling:** Use our in-house simulation environment as a synthetic data pipeline to model ('software in the loop') camera performance, environmental conditions and support algorithm verification prior to hardware testing.
- **Validation & Testing:** Lead laboratory and field-testing ('hardware in the loop') campaigns to validate CV model performance.
- **Hardware Selection:** Assist in selecting optimal imaging components (cameras, lenses, and filters) and compute modules needed for real-time vision systems.
- **Requirements Analysis:** Interface with stakeholders to review and assess system-level requirements for vision-based perception and spatial awareness.
- **Integration Support:** Support the integration of vision software stacks into the final production environment or edge devices.

Job Requirements

- **Experience:** 2+ years of experience developing and deploying computer vision models in real-world or simulated environments.

- **Technical Proficiency:** Strong proficiency in **Python** and common CV libraries such as OpenCV and PyTorch.
- **Software Engineering:** Good understanding of test-driven development and efficient coding practices for deploying models on resource-constrained hardware (edge computing).
- **Mindset:** A "can-do" attitude with the internal motivation to iterate on models from research papers to production-ready code.
- **Adaptability:** Ability to work under tight schedules and maintain high output within a fast-paced development cycle.

Assets

- **Spatial Awareness:** Previous experience of 3D computer vision (eg. SLAM, 3D reconstruction, NeRF, GS).
- **Deep learning limitations:** understanding the domain gap, careful dataset generation and bias.
- **OpenCV**: some experience of traditional techniques, particularly relating to camera calibration and eg. ArUco pose estimation.
- **Sensor Knowledge:** Hands-on experience with various imaging sensors (RGB, LiDAR, or Thermal) and their calibration processes.
- **Mathematics:** Solid understanding of **linear algebra**, sensor fusion, and **Kalman filtering** (EKS/UKF).
- **MLOps:** Familiarity with data labeling workflows, version control for datasets (DVC), and containerization (Docker).

Job Location: London, UK

Employment Type: Full time on-site

Salary range: £50,000 – £75,000/year depending on experience

Working at **Blackswan Space** - What's in it for me?

- Be a part of a growing international team that is not afraid of tackling some of the hardest problems in the space industry.
- Flexible and supportive working environment with real ownership of your work.
- Work alongside ambitious individuals who share your values and are passionate about the future of the space industry.

- Significant career growth and learning potential working with our global network of space experts spanning 3 continents.

To Apply: Please send your CV to info@blackswanspace.com