

dotOcean – Computer Vision Engineer

Computer Vision Engineer

dotOcean is seeking a **Computer Vision Engineer** to contribute to the development of **autonomous perception systems**. The engineer will be responsible for **designing, developing, and testing computer vision algorithms** for vehicles and situational awareness tools. This includes collaborating with robotic engineers on system integration, AI engineers on model development, and software engineers on implementation. A solid background in image processing, object detection, and related computer vision techniques is essential. The engineer reports to project or product leads and the R&D Manager.

Your Skills

Key Responsibilities

- Developed deep learning-based object detection algorithms for identifying ships, buoys and floating obstacles, enhancing 360° situational awareness in both the VISOR product for human operators and the AYB product for autonomous vessels.
- Designed and integrated multi-sensor fusion algorithms combining inputs from RGB cameras, thermal cameras, LiDAR, and radar, improving the data quality for decision-making in USVs and operator interfaces via the dotOcean cloud platform.
- Implemented video enhancement techniques to compensate for fog and low-visibility conditions, addressing key challenges in maritime environments.
- Integrated real-time video streaming (e.g., using WebRTC) over various wireless links, ensuring consistent video quality for operators in the Remote Operating Center (ROC).

Key Competencies

- **Problem Solving & Analytical Thinking**- Analyzes complex image data to solve visual perception problems. Develops strategic algorithms for image recognition and object detection.
- **Innovation & Creativity** - Develops innovative algorithms for image processing and analysis. Creates solutions for image recognition and object detection challenges. Seeks process improvements with innovative solutions.
- **Quality Focus & Precision** - Thoroughly tests computer vision algorithms and systems to ensure high accuracy and reliability. Refines and optimizes algorithms through regular testing.
- **Collaboration & Communication** - Communicates complex technical concepts clearly to both technical and non-technical team members. Collaborates closely with robotic, AI and software engineers on integrated solutions.
- **Proactivity & Initiative** - Proactively identifies opportunities to improve computer vision system performance. Anticipates potential problems and risks in computer vision projects.
- **Data-Driven Approach** - Analyzes relevant data to enhance the effectiveness of computer vision models. Uses data to optimize object detection and image recognition algorithms.

Technical Competencies

- **Master's Degree in Engineering or Physics**
- **Real-time video processing using OpenCV and NumPy:** Ability to manipulate and analyze video data using popular libraries.
- **Implementation of RTSP, WebRTC, and live streaming protocols:** Expertise in low-latency video transmission.
- **Deep learning-based object detection:** Proficiency in using models like YOLO, Faster R-CNN, and SSD for identifying objects in video.
- **Multi-sensor fusion (LIDAR, RADAR, thermal imaging):** Capacity to integrate data from various sensors for enhanced detection and navigation.
- **GPS and IMU data fusion for geolocation:** Combining location and motion data for accurate object tracking.

Our Talents

- At dotOcean, you'll work with the **latest technologies** in autonomous systems, automated operations and cloud technology.
- We're a growing team focused on **collaboration, coaching and personal development**. And yes, there's always laughter!
- We foster an open environment where **active listening** and the sum of all parts are valued. You'll grow both professionally and personally.
- After a week of hard work, we often head to the café to unwind. Our **party committee** also organizes fun activities and events.
- With 40-hour workweeks and 12 additional vacation days per year, we ensure you have the perfect **work-life balance**.

<https://dotocean.eu>