MACHINE VISION SYSTEM FOR SURFACE INSPECTION

MACHINE VISION SYSTEM FOR SURFACE I

Technical Documentation and IP Rights

NaviFloor Robotics, Inc.

Last Updated: January 11, 2024

1. OVERVIEW AND SCOPE

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1. This document describes the proprietary machine vision system (the "Syst

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2. The System comprises the following core components:

(a) Multi-spectral imaging arrays

(b) Real-time surface analysis algorithms

(c) Depth-sensing calibration modules

(d) Environmental mapping integration protocols

(e) Surface classification neural networks

2. TECHNICAL SPECIFICATIONS

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1. **Imaging System**

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Resolution: 4096 x 3072 pixels

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Frame rate: 120 fps

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Spectral range: 400-1100nm

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Field of view: 85° horizontal, 70° vertical

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Minimum illumination: 0.1 lux

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2. **Processing Architecture**

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Primary processor: Custom ASIC (NaviFloor Vision Processor NV-2000)

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Secondary processor: ARM Cortex-A78AE

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Memory: 32GB LPDDR5

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Storage: 512GB NVMe SSD

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3. **Analysis Capabilities**

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Surface material classification

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Defect detection and classification

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Real-time texture analysis

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Environmental condition assessment

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Obstacle detection and avoidance

3. INTELLECTUAL PROPERTY RIGHTS

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1. **Patents**

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US Patent No. 11,123,456: "Method and System for Real-time Surface Anal

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US Patent No. 11,234,567: "Adaptive Surface Navigation System for Autono

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Patent Applications: PCT/US2023/012345, PCT/US2023/023456

2. **Trade Secrets**

The following components are maintained as trade secrets:

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Surface classification algorithms

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Neural network training methodologies

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Calibration procedures

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Performance optimization techniques

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3. **Copyrights**

All software code, documentation, and related materials are protected under

Copyright Law and registered with the U.S. Copyright Office under registrat

numbers TX-9-876-543 and TX-9-876-544.

4. IMPLEMENTATION AND INTEGRATION

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1. **System Requirements**

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Operating temperature: -10°C to 50°C

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Power consumption: 45W typical, 75W peak

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Network connectivity: Gigabit Ethernet

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Environmental rating: IP65

2. **Integration Protocols**

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REST API for system control

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WebSocket interface for real-time data streaming

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Standard TCP/IP communication

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Custom protocol stack for high-speed data transfer

5. CONFIDENTIALITY AND SECURITY

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1. This document and all information contained herein are classified as Confi

2. Security measures implemented:

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AES-256 encryption for data storage

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TLS 1.3 for data transmission

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Role-based access control

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Audit logging and monitoring

6. WARRANTY AND LIMITATIONS

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1. The System is provided "as-is" with no warranties beyond those explicitly

2. Company maintains the right to modify, update, or discontinue any aspect

7. CERTIFICATION AND COMPLIANCE

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1. The System has obtained the following certifications:

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CE Mark (European Union)

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UL Certification (United States)

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RoHS Compliance

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ISO/IEC 27001:2013

8. DOCUMENT CONTROL

Document Number: TD-MVS-2024-001

Version: 3.2

Classification: Confidential

Department: Engineering

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EXECUTION

IN WITNESS WHEREOF, this document has been executed by the duly aut

representative of NaviFloor Robotics, Inc.

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NAVIFLOOR ROBOTICS, INC.


By: _

Name: Marcus Depth

Title: Chief Technology Officer

Date: January 11, 2024
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