Neural-Eye

Team Members

- Andrei Tulpan
- Theodor Paraschiv
- Traian Enache
- Robert Pancu
- Andrei Ion Toader

Project Summary

Project Overview:

Neural-Eye is a web-based platform designed to receive, process, and store images transmitted via MQTT from ESP32-CAM devices.
The platform offers functionalities such as user authentication, device management, camera control, image processing.
Users can manage devices, adjust camera settings, process images, and download results through an intuitive web interface.

Default OSSF critically score result:

default_score: 0.19494

Functionality, Documentation, Execution

- Working Features

- User Authentication: Secure login system for users to access the platform.
- Device Management: Monitor ESP32-CAM devices.
- Image Processing: Apply OCR and extract text from image on demand.
- Web Interface: User-friendly dashboard to interact with all features.

- Developer & User Documentation

- README.md: Comprehensive guide on setting up and using the platform.

- API Documentation: Detailed API endpoints and usage examples.
- User Manual: Step-by-step instructions for end-users to navigate the platform.

CI/CD Evidence or Execution Steps

Security & Compliance

- Threat Modeling & Mitigations

- Identified Risks:
  - Unauthorized access to devices.
  - Data interception during transmission.
- Mitigations:
  - Implemented HTTPS for secure communication.
  - JWT tokens for user authentication.

- MISRA / CERT Compliance

- Static Analysis Summary:
  - Used tools like Cppcheck and ESLint to ensure code quality.
  - Addressed all critical warnings and errors.

- Testing & Coverage

- Testing Strategy:
  - Unit tests for individual components.
  - Integration tests for API endpoints.
  - End-to-end tests using Selenium.

- SBOM & Dependencies

- SBOM Report: Generated using CycloneDX.
- Vulnerability Check Summary: No known vulnerabilities detected in dependencies.

- Fixing Own Vulnerabilities

- Issue: Discovered a vulnerability in the image processing module allowing buffer overflow.
- Fix: Implemented input validation and buffer size checks.

- Reporting Peer Issues

Reported Issue: Identified and reported a security flaw in a peer project related to unsecured MQTT communication.

Team Contributions

Team Member	Lines Added	Lines Removed	Number of Commits
Andrei Tulpan			
Theodor Paraschiv			
Traian Enache			
Robert Pancu			
Andrei Ion Toader			

OSSF Criticality Score

PS > criticality_score -gcp-project-id=norse-sequence-351721
https://github.com/andreitulpan/Neural-Eye

repo.url: https://github.com/andreitulpan/Neural-Eye
repo.language: TypeScript
repo.license: Other
repo.star_count: 1
repo.created_at: 2025-03-12T10:34:59Z
repo.updated_at: 2025-05-25T19:01:29Z
legacy.created_since: 2
legacy.updated_since: 0
legacy.contributor_count: 6
legacy.org_count: 0
legacy.commit_frequency: 1.81
legacy.recent_release_count: 0
legacy.updated_issues_count: 0
legacy.closed_issues_count: 0
legacy.issue_comment_frequency: 0
legacy.github_mention_count: 3
depsdev.dependent_count:
default_score: 0.19494