NINOX 360

Capabilities Overview: Ninox 360 specializes in visual AI for quality control in manufacturing, tracking inventory, managing supply chain, testing autonomous systems, and visual localization and mapping in adverse environments. Our approach keeps costs down and projects on time starts by rapid prototyping, then scaling up as milestones are met to full deployment. We fuse the best in geometric model based approaches with the latest in deep learning.

We would like to highlight for WRIVA our photogrammetry and camera self calibration technology. A more academic description of the first version of the self calibration technology can be found on Youtube at https://youtu.be/O_yAdsT8d84 . This technology is capable of estimating heterogeneous camera intrinsics and extrinsics varying parameters without strong priors (e.g. known focal length from metadata) in which other photogrammetry software we have tested would fail to converge. It can evaluate multiple hypotheses and output their likelihood. For example, determining if a camera is zooming in or if the observer is moving forward can be difficult to distinguish. The software has already been tested on aerial footage and handheld devices.

An open source version can be found in the BoofCV project at https://boofcv.org

We are applying this same technology in the manufacturing space as a way to make using our devices easier to use.

Services Available (Our typical products)

- Low cost rapid prototyping to identify simplest solution
- Simulation tools to reduce cost and estimate final results
- Custom solutions for quality control and fault detection
- Natural and marker based localization for adverse indoor and outdoor environments
- Scanning boxes, bar codes, for compliance and defects
- Closing-the-loop by guiding humans in manufacturing
- Sensor and robot calibration with access to proprietary self calibration technology
- 3D scanning and modeling, specializing in degenerate geometries
- Evaluation of third party and open source tools for your application
- Ready to deploy networked smart sensors for quality control and remote sensing

Company Data

DUNS	080653147
CAGE	8ZRW0
NAICS	541715 334511

Key Clients

BOOFCV

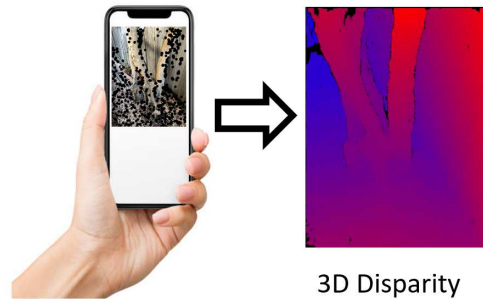Computer Vision https://boofcv.org

Android Apps

EJML

Linear Algebra https://ejml.org

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Natural and Marker Based Visual Location, Mapping, SLAM, 3D Reconstruction

3D Disparity
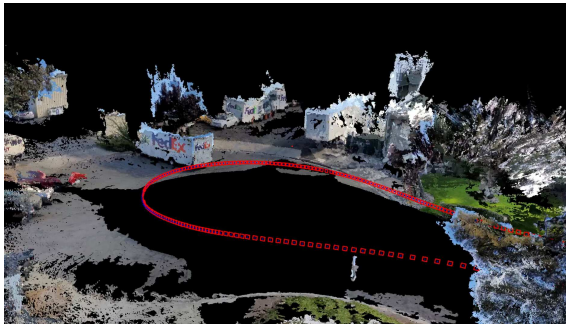
*3D Reconstruction from uncalibrated camera*   *Android 3D cloud using auto selected images*

Highly accurate estimate of 3D precision based on image quality and geometric stability designed for engineering not to just look pretty. Runs in GPS denied environments and low power devices. Does not require prior calibration even on atypical optical hardware.

Warehouse and Supplychain

- Barcode and Marker Scanning in industrial environments (e.g. low light, motion blur, damage)
- Easy mass scanning of complex scenes with high reliability
- Box sizing and damage detection
- Custom detection of parts/components
- Visual indoor localization/mapping
- Flexible hardware requirements depending on customer needs

Calibration and Self Calibration of Robotic and Multi Camera Systems
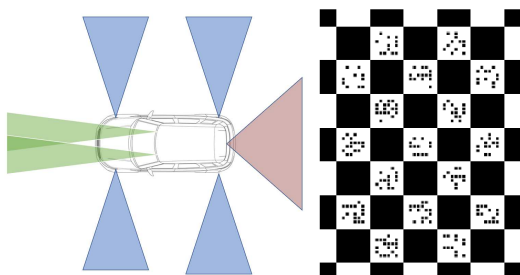
- Design and build marker based setups
- Reduce cost using simulation to validate
- Automatic detection of poorly mounted lenses, angle errors, and other faults
- Open source and proprietary options available
- Proprietary software for degraded environments and mixing natural features
- Proprietary self-calibration algorithms