MR TECH

High-performance software for image processing

MRTech SK develops proprietary cross-platform software for building full image processing pipelines in Machine Vision systems and applications.
MRTech SK offers service to implement and customize integrated software solutions for customer's hardware platforms.

Advantages

- Cross-platform software
- Flexible processing which is open for integration with customer's and third-party application software
- Possibility to achieve maximum performance for the customer's particular hardware / software configuration

Basic features

- Acquisition of images and camera synchronization
- Colour images pre-processing (black level, white balance, LUT, denoise, demosaicing, etc.)
- Rendering on a screen
- Encoding / decoding, RTSP / HTTP streaming
- Format transformations
- Disk writing and other.

Compatibility

- X86, Apple, NVIDIA GPU, ARM
- Linux, Windows, MacOS, Android
- NVIDIA CUDA
- XIMEA API and tools for comfortable use of cameras

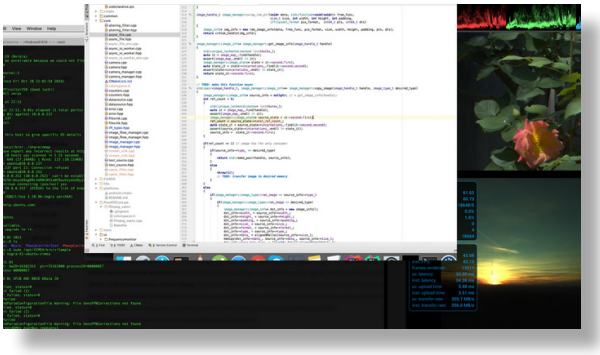
ximea

Machine vision algorithms

- Wide range of imaging algorithms impelenteed on discrete or embedded NVIDIA GPUs
- Standard and modern video processing algorithms, such as real-time object detection, localization and classification based on state of the art neural net, robust real-time object tracking, etc.

Applications

Multi-camera embedded system for panoramic video	Hardware: - 3x 3.1 MPix XIMEA cameras - NVIDIA Jetson TX2 with custom carrier Software: - Linux for Tegra - image pre-processing - rendering, H.264 encoding, streaming
5K embedded camera for UAV	Hardware: - 20 MPix PCIe XIMEA camera - NVIDIA Jetson TX2/TX2i with carrier Software: - Linux for Tegra - image pre-processing, SSD writing - H.265 encoding, streaming
Real-time video GPU station	Hardware: - 12/20/50 MPix PCIe XIMEA cameras - powerful X86 desktop computer - NVIDIA GTX/GT, Quadro, Tesla GPUs Software: - Windows10 or Linux - full and customized processing pipeline
Welding control system	Hardware: - xiQ XIMEA cameras MQ013CG-ON - Laser welding system with Intel NUC Software: - Linux Ubuntu OS - image pre-processing, HDD writing - OSD, custom processing algorithms - integration with control system



MRTech SK s.r.o. org@mr-technologies.com

MRTech SK is a Slovakia-based company developing accelerating HW / SW technologies for machine vision, embedded systems and visual computing.

MRTech SK is a Technological VAR partner of XIMEA www.ximea.com

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Machine Vision embedded solutions

High-resolution camera for UAV Aerial Mapping

Application:
- 5K vision system for Long Distance Remote UAV

Cameras:
- XIMEA 20 Mpix PCIe camera MX200CG-CM
- Two 3.1 Mpix PCIe cameras MX031CG-SY

Hardware:
- NVIDIA Jetson TX2 / TX2i module with custom carrier
- NVMe SSD 960 PRO M.2 onboard

Image processing:
- Full pre-processing workflow – acquisition, black level, white balance, LUT, demosaicing, etc
- SSD writing
- H.264/265 encoding, RTSP streaming via radio-channel

Results:
- Streaming of 4K images with 25 FPS and 2x FullHD 1080p (1920 x 1080) images with 30 FPS simultaneously
- Download of a high resolution snapshot images
- Power usage 35W (including all cameras)

Additional features and options:
- On demand customization with external devices
- Implementation of MV algorithms

Multi-camera embedded system

Application:
- Panoramic real-time video

Cameras and hardware:
- Three xiC/xiX XIMEA cameras 3.1 MPix, up to 122 fps each
- NVIDIA Jetson TX2 module with custom carrier

Image processing:
- Full pre-processing workflow – acquisition, black level, white balance, LUT, demosaicing, etc
- Rendering on a screen or H.264 encoding and streaming

Results:
- 55 FPS with 3 cameras running at the same time
- 9 ms processing latency
- Power usage 22W (including cameras)

Additional features and options:
- On demand customization, external devices
- Implementation of MV algorithms such as stitching

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