Challenges Maximizing Real-time Computations?

Embedded system data flow framework fuses real-time data with massive parallel computing
Enables Real-Time Phased Array Radar Simulation

FishEye Real-Time

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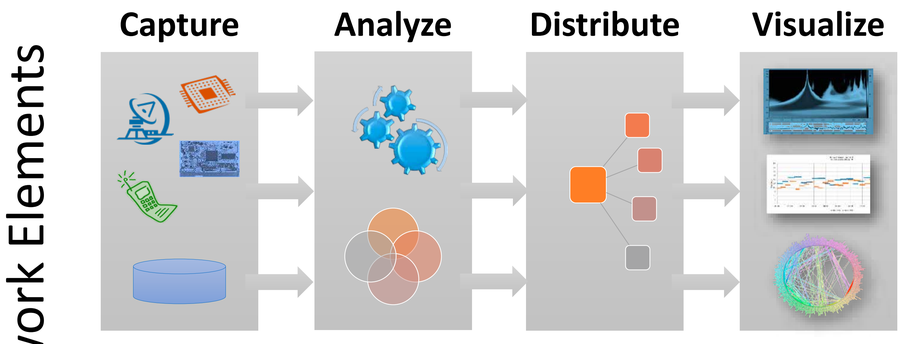
A Framework enabling real-time data flow to & from massive parallel GPU computing.

Enables a New Era in Real-Time Computing with GPU Technology
The GPU computing power now allows inexpensive computers instead of custom hardware to analyze large volumes of data very fast. While there is now enormous computing power a new challenge emerges getting large volumes of data to and from the massively parallel computing power while maintaining real-time timelines. FishEye with 20 years developing real-time embedded systems offers a framework that maximizes the flow of heterogeneous data in real-time. The framework enables a new generation of real-time applications that can leverage off-the-shelf massive parallel micro-computing capabilities offering:

- Enough processing power and speed for real-time and high fidelity applications
- Low cost hardware and operation on top of standard operating systems and hardware enabling seamless upgrade to future generations hardware
- Provides flexible modification of capabilities



Capture: Streaming acquisition of machine data from any source.
Analyze: Real-Time streaming analysis on massive parallel computing.
Distribute: Move real-time data seamlessly between heterogeneous.
Visualize: Represent and understand data in real-time.

An example use of the framework models radar signals and operates at real-time speed and thus offers a drop-in replacement for the radar hardware (enabling modeling and simulation capabilities to be integrated into the sensor). This framework provides:

- Manage and move radar signal data efficiently and at the highest possible speed
- Distribute and flow data between radar hardware, computers, and GPU's
- Provide a configurable framework supporting various types of sensors
- Provide foundational computation building blocks that can be overridden

Example: Real-Time High Fidelity Radar
Benefit: 10,000x Price-Performance Gain

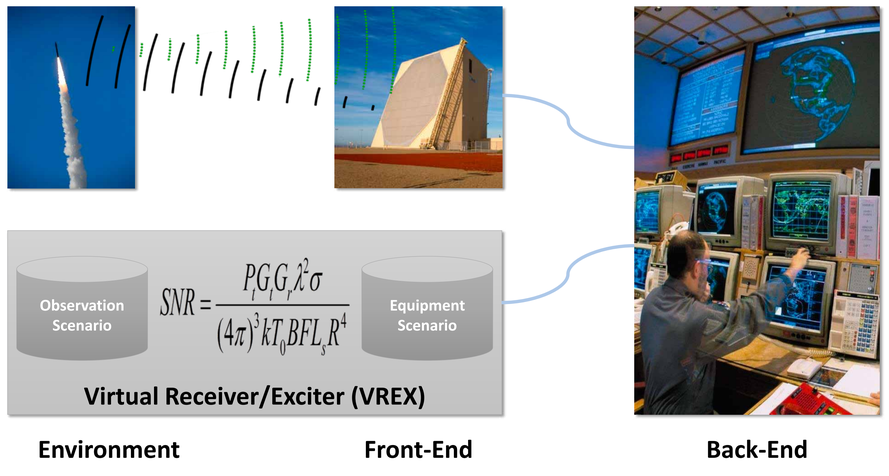
Moving radar signal processing off traditional hardware and onto GPU's delivers close to a 10,000x price-performance increase. GPU's offer over 290x processing power at 3% of the hardware cost.

Traditional radar hardware and computing is custom and very expensive. Radar sensors continue to be critical to defense, aerospace, navigation, and weather systems providing capabilities to track targets and sense environmental conditions.

1. While radars offer many valuable characteristics they are expensive to design, develop, fabricate, and maintain.

2. Furthermore the speed of operation and the required compute intensive processing make fully exploiting the sensor's data difficult.

Many radar functions like waveform generation, receive beam processing, target tracking, noise, and environment simulation are well suited to the GPU's powerful parallel processing capabilities. The functions require lots of computation that can be processed independently while looking at common data and thus ideal for GPU's single instruction multiple data (SIMD) processing. But there are challenges in managing the large flow of data while keeping up with hard-real-time deadlines required to process microwaves echoing off targets traveling close to the speed of light.



Email questions or a demo
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