GPU shipments

opportunities in AI, gaming, and vehicles

Jon Peddie Research

Jon Peddie Research

Focus and emphasis on Visualization, Graphics, and forms of reality

Consulting and market research - Advisor to industry leaders and investors

Reports on various Digital Technology Markets and products

Product testing, benchmarking, and Conferences

The Business of Multimedia and Visual Magic
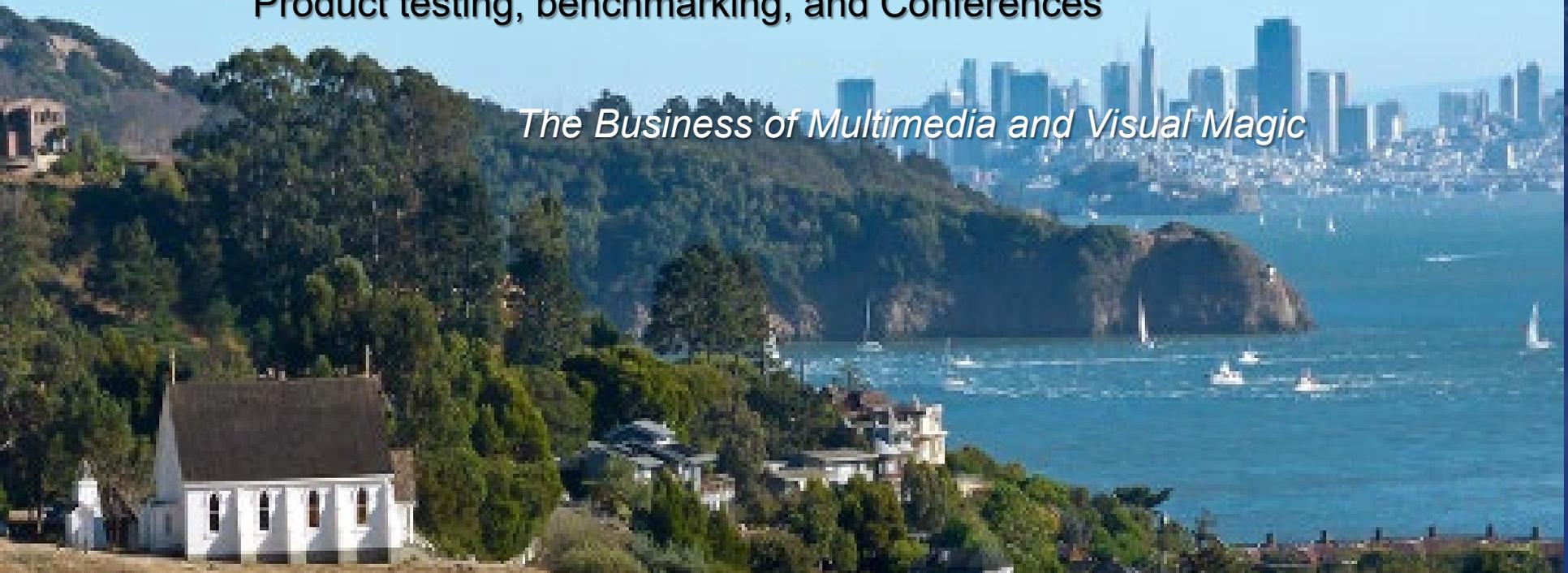
Jon Peddie Research

JPR
Processors
and Software

Graphics Speak
Professional
graphics

Display Daily
From micro
to mega screens

BableTechReview
Benchmarking,
VR, and testing

Consulting services and reports

Whatever Influences a Pixel

Communications & peripheral services

Tuner(s) — Media — Image sensor — Audio processor

Semiconductor Fabrication

Local Memory

Input Processor — Front-end Processor — Image Processor — Graphics Processor — Video Processor → Display

System Memory

CPU

OS

APIs Drivers

Application

Standards and APIs

Primary interest, Expertise and tracking

General interest, information gathering and limited tracking

Benchmarking & Testing services

The GPU Universe has a lot of stars

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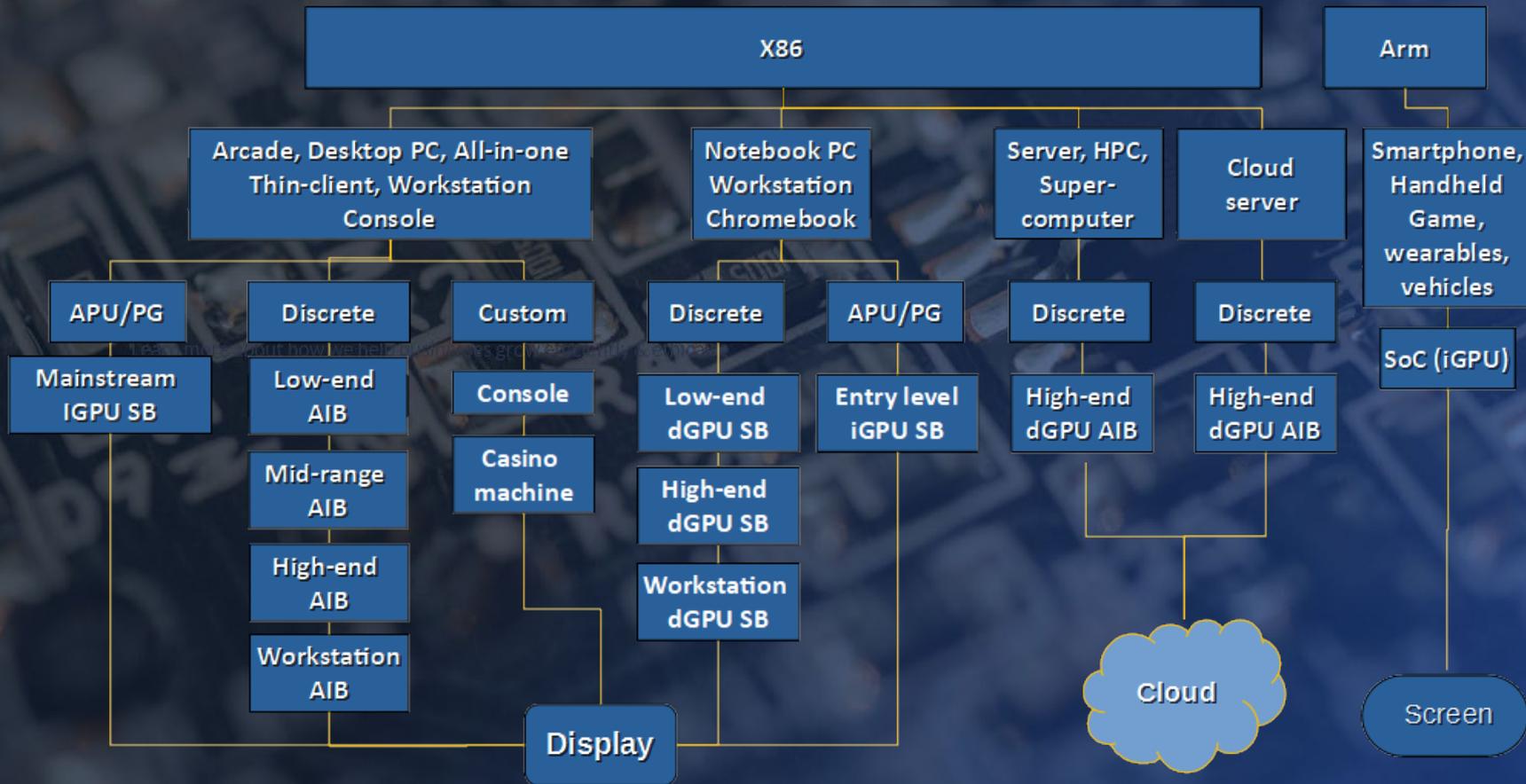
Arm-based SoCs

Largest shipments and installed base—billions a year

Smartphones to wearables, vehicles, and servers

Five leading GPU suppliers: Qualcomm, Arm, Imagination Technologies, Apple, and VeriSilicon

Low power yet amazing performance

X86-based Systems

Hundreds of millions every year

Notebooks, consoles, to workstations and supercomputers

Three leading suppliers: AMD, Intel, Nvidia, plus five Chinese startups (Biren, Innosilicon, MetaX, MooreThreads, and others)

GPUs in smartphones and wearables
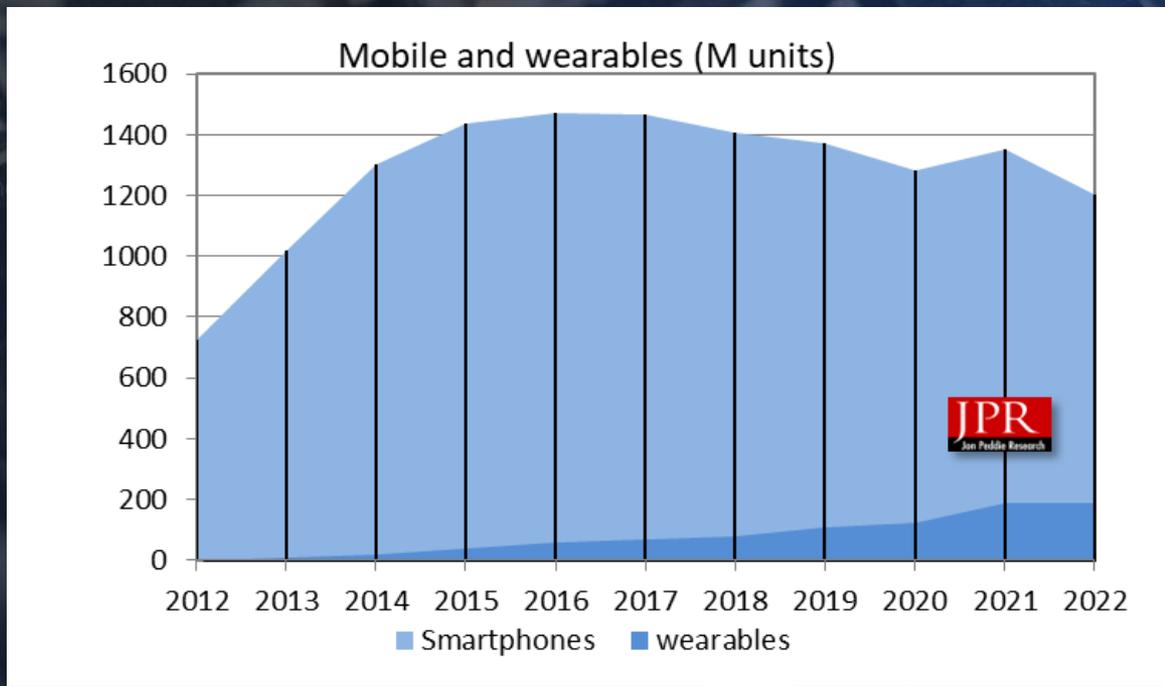
GPUs in x86 Systems

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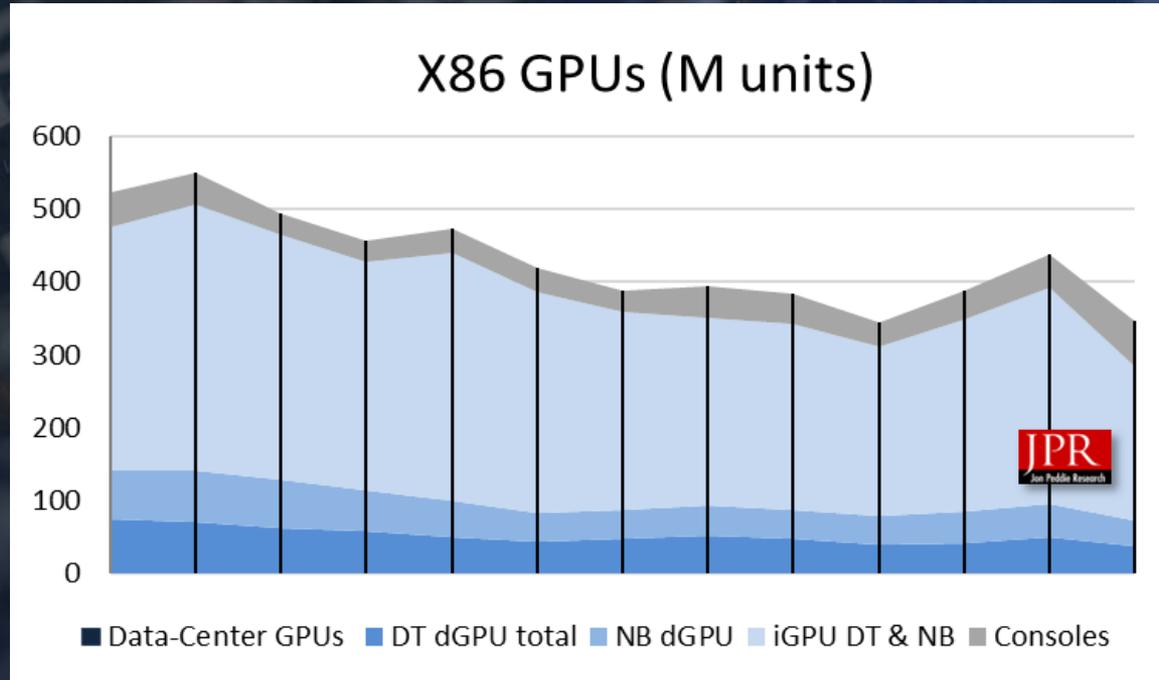
Competition in AI

GPUs vs ASICs:

- Established companies AMD, Intel, and Nvidia, mass produce GPUs for multiple applications.

- AI ASIC startups have only one application — therefore they can't get the same economy of scale even if their processor are faster (and most ASICs are).

Competition in Size

AMD, Intel, and Nvidia employ over 20,000 engineers and scientist in GPU research & dev. Startups combined are a few hundred.

Competition in Prestige

Frontier — 3,700 Inspire GPUs 1.0 EFLOPS

Aurora — 6,100 Porte Vecchio GPUs 1.2 EFLOPS

MS Azure — tens of thousands of Nvidia A100 and H100 GPUs

Datacenter, AI and Supercomputer GPUs ~ $2 Billion
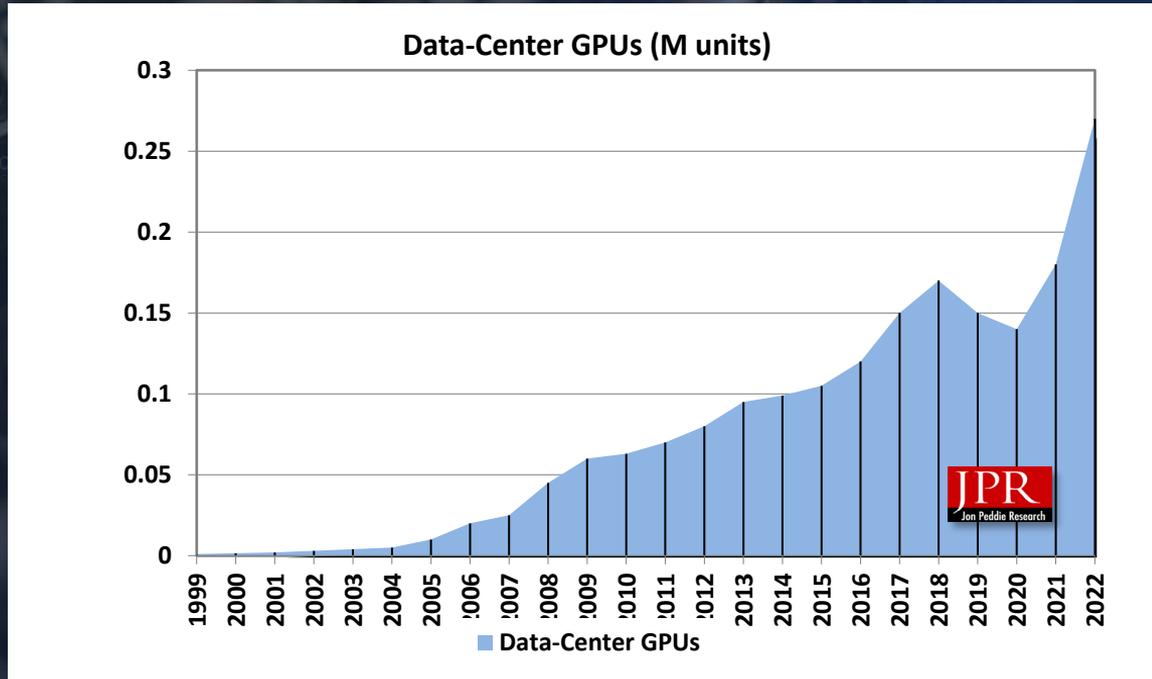
# Total GPUs

Reports on GPUs

https://www.jonpeddie.com/store/#reports

Books on GPUs

https://www.amazon.com/History-GPU-New-Developments/dp/303114046X
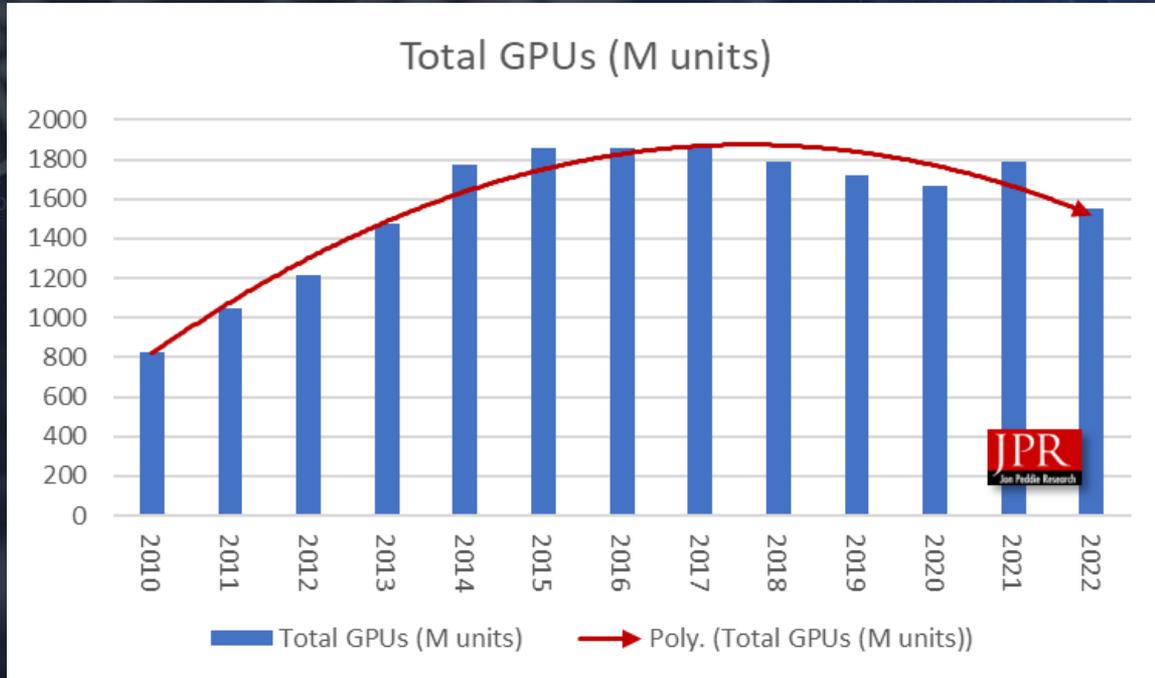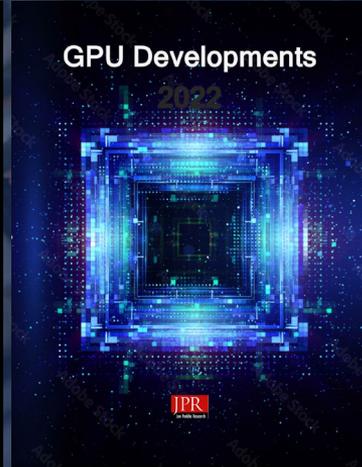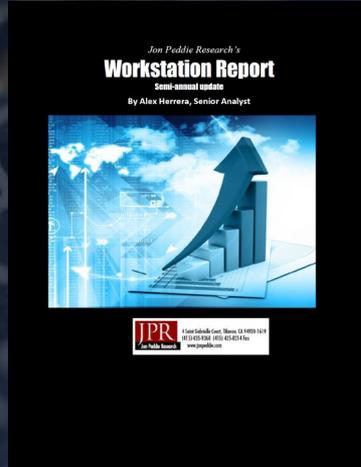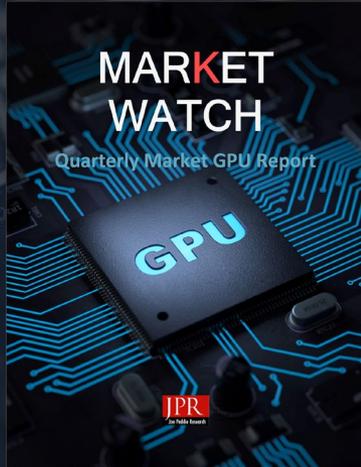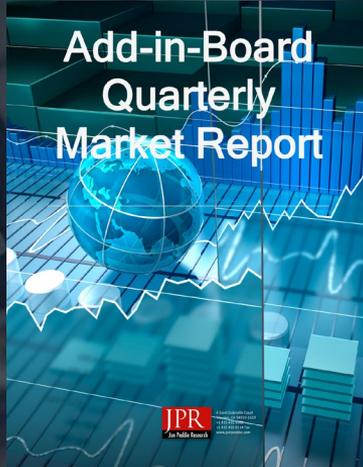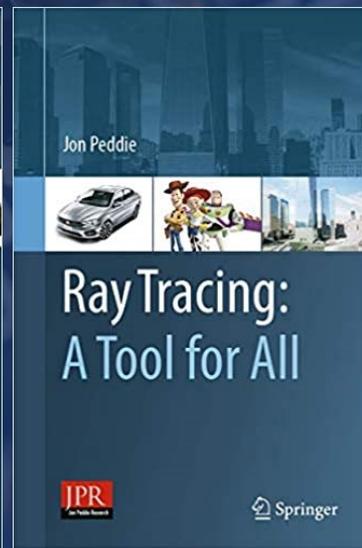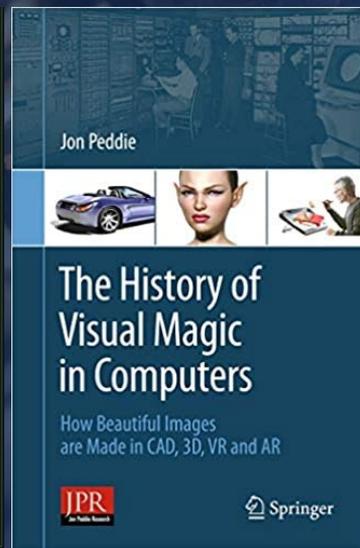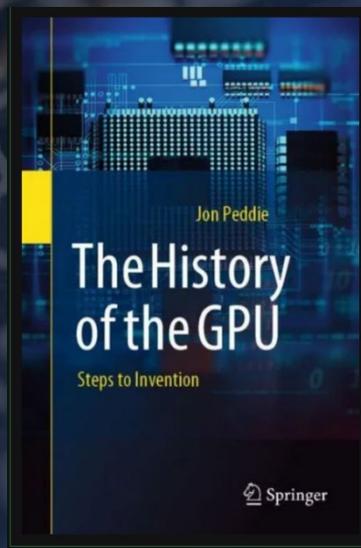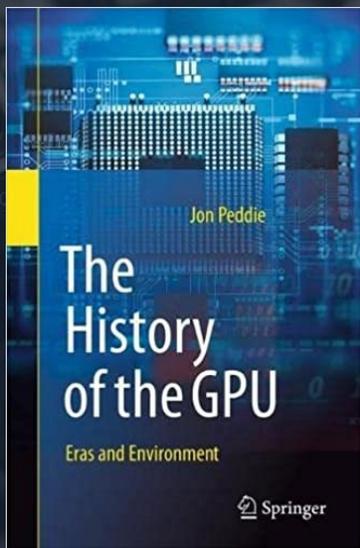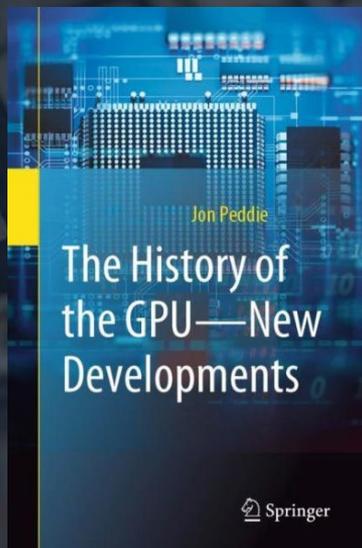
Summary

35 years of offering highly technical marketing and strategic consulting

Advisor to top management in component, subassembly, software, and systems suppliers

Extensive data bases of industry information and personnel

Broad range of reports

Custom reports, surveys, and product testing

Chasing pixels – *finding Magic*

Learn more about how we help businesses grow and build wealth...

...Be Seeing You

Industry veteran, started four companies, holds several patents,
authored ten books, and co-authored another seven

Jon@jonpeddie.com

23 Years of Evolution

Over 1,000 times performance

	GeForce 256	Hopper 100
Released	October 1999	March 2022
Transistors (millions)	17	80,000
Manufacturing process (nm)	220	4
Shaders	4	14592
ROPS	4	24
Tensor cores	0	456
Die size	139 nn^2	814 mm^2
GFLOPS	50	51,220
Power (watts)	200	750