

■ David Wyatt

20yrs experience of ideation to successful product: as shipped by Apple, DELL, HP, Google, IBM, Lenovo, Microsoft, Samsung, Sharp, Sony, and more. Accomplished leader, architect, evangelist, bridging cross-team/function and domains, forging ecosystem-partnerships, to realize novel platform innovations; keeping focus on quality, content and the vectors of consumer attraction.

With 200 patents filed, experienced at creating valuable IP, with innovations across a diverse range sectors: Auto, Display, FinTech, GreenTech, IoT, Portable, Smartcard, VR/AR, and more.

■ PixelDisplay Inc, Apr'16 to Present <http://PixelDisplay.com>

Role: VP Engineering & Technology Licensing

Summary: Startup doing IP for wide color gamut, per-pixel processing, high-dynamic range, for Portable UHD, AR/VR/MR, on LCD & OLED.

Key Accomplishments: filed PCT patents, and rapid-prototyped Vivid Color™; an LED light source based on a novel energy-recycling design. Demonstrated proof-of-concept: 10nm FWHM primaries (2x the purity of Quantum Dots, without lasers or heavy metals), and **50% power saving** vs RG-LEDs. Collaborated with UCF validating **97.8% of BT.2020** performance equal to **lasers**, and publishing joint paper; nominated **SID distinguished paper award**. Negotiating agreements, with top 10 OEM, LED, TCON, Panel, AR makers: Taiwan, Japan, Korea. Completed emulation of novel HDR digital control algorithms for edge-lit LCD, using MatLab, to visually demo actual regional-panel response. Evangelized to TCON, Backlight, Vcom and Panel Vendors. Engaged IHV's, enabling first adopter to successful ES Si, and customer demo's.

■ CardPlus / CardWare, Aug'15 to Oct'16 <http://Card-Plus.com>

Role: Founder, President

Summary: Startup developing Payments products; IP in SmartCard, mobile payments and IoT; solving key world-wide payment pain-points; online, and in-store; extending mobile, into P2P and Blockchain.

Key Accomplishments: built up a team of 14 business, eCommerce, marketing, designers, and payments industry experts to build & refine: GTM business plan, around breakthrough payments solution; with per-transaction revenues for optimized IRR; within 1yr \$500K budget.

Proved MVP value proposition, viral adoption, with >2x cost-pricing; across global markets (Australia, China, HK, Taiwan, India, Japan, UK, US). Engaged **China UnionPay** gaining support to certify for CUP network use. Formed partnership agreement with HK City University to validate, and support China card makers. Engaged banks and gift card makers for BIN's in key networks. Secured American Banking Assoc. support and payment card **Issuer Identification Number (IIN)**.

Role: Chief Technology Officer

Key Accomplishments: grew team to 6, engaging SoC, PCB vendors & designers, completing rapid-protos secure RTOS firmware mag-stripe & NFC payment on **two SoC's**: proof-of-concept for demo's of eCommerce & in-store solution, IP and software API development. Negotiated supplier (IoT ARM, NFC, RF, and Magnetic) agreements, securing customizations; and Taiwan, China card manufacturers for production. Secured MAC, OUI (IEEE), and TCP UDP (IANA) to base API on Wireless & Internet standards; developing **CardWare™** the worlds first FinTech PaaS, with an API for **apps on cards**, tokenized payments, IoT, P2P, Crypto, Blockchain and Analytics. **5 patents filed, 4 patents issued.**

■ NVIDIA: Distinguished Engineer, Aug'14 to Aug'15

Role: Ecosystem Development & Licensing Lead. Architect

Summary: Led a newly created Display Technology group of 18, in both technologist and business roles, negotiating IP licensing, creating partnerships, securing roadmap support for present & future BU needs, across the display & display-component vendor ecosystem.

Key Accomplishments: licensing **27 of the 29** key ecosystem vendors based on my specifications and IP (e.g. **G-SYNC, JT, PRISM**) extending industry leadership, enabling value-add IP for key BU sectors. Established Labs in USA, Taiwan and Japan, enabling technology deployment at vendor and customer. Partnered with instrument & equipment vendors to develop automated testing technologies; deploy compliance cert. methodology, at vendor and partner facilities, minimizing trade secret IP risks, for a successful

transition into wider production. Negotiated vendor requirements and recommendation checklist, building up an RVL (Recommended Vendor List) for customers; accelerating competition between vendors. Grew, trained and managed team of ~20 direct and dotted-line reports, harnessing local support for customer & vendor liaison, and enabling.

■ NVIDIA: Distinguished Engineer, Nov'11 to Aug'14

Role: GPU & Tegra Platform Architect. GPU Security Architect

Summary: Led a team of ~75 direct & indirect reports to accelerate the wider adoption of platform technologies. Created the model for prolific IP Licensing. Built an ecosystem of touch, display TCON & Panel vendors, across US & Asia, and engineer/enabling teams to support.

Key Accomplishments: Completed working prototype in partnership with Samsung **achieving >24Hr battery-life**, optimized race-to-sleep for multi-day Mobile (and other BU's e.g. Instant-On for Automotive).

Created and led a Smart Panel initiative, starting with a novel **FPGA** proto-design, then embedding NVIDIA IP in panel components covering BU needs in Portable, AR, VR and Automotive. The technology was quickly emulated by Intel and Apple, appearing in the **MacBook**.

Represented NV in **VESA DisplayPort** and **PCI SIG** standards bodies, and extended e.g. Touch, dual-link (which was licensed by Parade for **iMac Retina 5K** display), HDR, variable refresh and fast link training.

Created the content protection infrastructure, decrypt and digital signing workflow for the first, full-stack **hardware accelerated MP4 HVEC audio/video decode of iTunes**. This included leading negotiations with Apple product & legal stakeholders, supporting FairPlay requirements, licensing the IP and technologies to Apple for integration across 50mu/yr platforms.

Created certificate & serialization for subscription licensing business model, enabling value-add features on VGX, GRID & Tesla, through soft-switched pricing mechanisms, enabling >**3x revenue** growth, same Si.

Formed the Software IP Review Council team, created process for accelerating reviewing, ranking & filing; resulting in a **10x increase in IP throughput** (disclose-review-rank-assign-file) for the organization.

■ NVIDIA: Principal Engineer, May'06 to Nov'11

Role: GPU & Tegra Platform Architect. GPU Security Architect

Summary: Led cross-functional team of ~100 Software and Hardware Engineers to deploy platform innovations including Hybrid Graphics (aka Switchable, Optimus), G-SYNC, PRISM, Ventura, PMU.

Key Accomplishments: **Hybrid Graphics** combining integrated & discrete graphics in one system, dynamically switching on the fly, giving best in class battery-life & performance. Widely adopted (**Apple MacBook Pro, Sony**), cross-licensed (Intel "Switchable Graphics") and extended (**Microsoft SurfaceNote, Nintendo Switch**). This involved forging partnership and framework for collaboration with rival: **Intel**, as well as the Firmware vendor ecosystem (Phoenix, AMI, Insyde) enabling driver & platform support; authoring detailed Internal and External Specifications; working with Microsoft Base and WHQL teams; influencing Logo requirements and O/S changes, for long-term success.

G-SYNC: creating async refresh for TFT displays; seamless on-the-fly updates, stutter-free 3D/UI/Video and power-savings. Emulated by competitors (AMD FreeSync), and adopted in VESA & HDMI Standards.

PRISM: advanced backlight control, creating the largest battery-life saving feature on Tegra (shipped in **Surface, Nexus, ChromeBook, MiPad**), and advanced to support anti-glare, night-dazzle for **Automotive displays** (as used on **Audi**).

Awarded **Distinguished Engineer**, by the CEO, and created a new team to accelerate NVIDIA's involvement in Display Technologies.

■ NVIDIA: Principal Engineer (cont.)

Created **SECOP**, the first hardware and ISV SDK, requiring no content licensing to accelerate premium-content (e.g. BluRay) A/V decode.

Ventura aka "Battery-Boost" balancing power within platform thermal budget (package, air/skin-temp constraints), and borrowing **5~35W** of CPU thermal headroom, to increase GPU performance, when desired.

Created the Power Management Unit (**PMU**): Full Chip Sleep, Wake, Reset, Power-Perf State & Thermal self-management. Architected cross-chip interfaces, RTOS control, and sequencing. Drove Hw design and firmware development, from FGPA to on-chip control all NV GPU's.

Leader of Cross-Functional Initiatives across BU's covering Power, Display, Content Protection & Security, cross-organizational IP review.

■ Intel: Mobile Platform Group, Jan'03 to Apr'06

Role: Platform Architect. Manager Mobile GFX-Chipset team

Summary: Managed a team of 20, which created technologies to enhance Battery-Life, optimizing the user experience on Intel Mobile Platforms. This included working with organizations such as JEDEC, ACPI, CardBus, USB, PCI, Microsoft, to improve power & performance.

Key Accomplishments: Architect of Camarillo, which became DPPM and **CPU Turbo Boost**. Created passive cooling technology incorporating performance balancing skin/package temp management. Reducing thermal footprint, and fitting more perf. in same form factor.

Recognizing Memory is the 3rd largest power device in systems, invented the On-DIMM & On-die Thermal Sensor for Memory and by working with memory vendors, and chipset & software mechanisms to support better platform thermal management, drove the **TS standardization through JEDEC**.

Invented **Dynamic Refresh Rate Switching**, **DRRS/sDRRS** was incorporated into Centrino. Co-inventor, architect and evangelist for **DPST (Display Power Saving Technology: Backlight/Contrast Modulation)** which was incorporated into the Centrino Platform, and became Intel's flagship technology for EBL (the Extended Battery Life Initiative), **reducing panel power >50%, system power ~25%**.

■ Intel: Client Platform Group, Apr'98 to Jan'03

Role: Lead Software Architect. Senior Staff / Chief Engineer

Summary: Created the Intel Graphics Software Architecture, and led the software engineering team of ~200 across: Kernel & User Mode, 2D/3D, Video, Firmware, UI, API and OEM enabling teams.

Key Accomplishments: Engaged first major notebook customer for Intel: **IBM Thinkpad**, won over the Yamato team with the "Portability Architecture", and brought Intel's first Mobile Integrated Graphics Platform: the 830M, successfully into volume production.

Led engagements with Microsoft, and ISV's with Marketing, to enable API's and optimize support. Co-authored (with Microsoft), the Video Extension section of the **ACPI 1.0 Specification**, the foundation for how Mobile O/S and Graphics Platform features inter-operate.

Invented "Resource Manager" and "**Dynamic Video Memory Technology**" (DVMT), balancing shared resources in SoC systems. Created Hw & Fw & Sw Specifications to seamlessly extend the Platform Video BIOS & Driver, and 3rd-party add-in Vendor Ecosystem.

Invented Upstream Protocol authentication enabling Mobile platforms (without HDCP) to show premium content on the internal panel, and evangelized support in content licenses, and HDCP licensing body.

Evangelized Intel Integrated Graphics through Whitepapers, and public speaking at **Game Developer Conference (GDC)**, **VESA**, **WinHEC** & **Intel Developer Forum (IDF)**, press Q&A. Asserted Intel's Graphics business interests in standards, from PC'99 through WHQL, and WLP.

Graphics lead in the Intel Chipset & Graphics IP Review Committee, reviewing cross-org Invention Disclosures.

■ Chips & Technologies, Jun'96 to Apr'98

Role: Lead Software Architect, Chief Engineer

Summary: Software Architect and advocate of the software application and O/S needs across hardware architecture, engineering and validation teams, as well as externally to Intel, Microsoft, VESA, DDWG.

Key Accomplishments: Created the "**Portability Architecture**" completely re-architecting the Windows NT and 9x driver stacks HAL/CAL modularity, together with a new firmware interface optimized for scalable customer enabling/support. Led the software firmware engineering team (~50) successfully into production release. Developed worlds first Tablet Graphics Driver for WindowsNT based on C&T Graphics for customers launching on Toshiba's Tablet PC. Subsequently engaged with Microsoft on their native tablet initiative and enabled C&T to take lead in the MS PenWindows release.

Represented App, O/S, driver and team software in platform architecture and marketing, in cross-corporate project engagement with Intel; transitioning C&T IP from acquisition, thru the 1st ship of Intel Discrete Graphics, and into Integrated Graphics platform project.

■ Earlier work experience available on request.

Skills

Business planning, budgeting, resource & revenue projections, contracting, capitalization, metrics (IRR, ROI, EBITDA, Burn, TTL, PMoU, LoI, and licensing negotiations. Strategic marketing, and Patent analysis, and claims chart analysis.

Project, program and team management techniques (Agile, Tuckman model, MAP day, project estimation, ranking-rating, open office).

Software and Hardware engineering and management e.g. Inspection reviews, defect resolution and quality metrics, ProductLifeCycle, ISV enabling. Methodologies for pre-Si validation, rapid-prototyping, projection, incl. FPGA, C-Model (SystemC), Quickturn, DFM, DFT.

Architecting interfaces at both Software and Hardware level, writing detailed Specifications for internal engineering, and external enabling.

Circuit and PCB design principals, manufacturing QA/QC processes.

Engineering tools from MatLab, to Visual C/C++, RTL/VHDL, to Circuit & Layout design e.g. Orcad, Protel, Spice. Video Codecs & Compression.

Experience in wide range of software languages from C/C++ to Assembly Language. Familiarity HTML, Java, Javascript, PHP, etc.

Process/project mgmt tools: GitHub, Jira, Trello, Bitbucket, Upwork.

Cryptographic signing processes, and digital key management SSL.

Productivity tools (Word, Excel, PowerPoint, Project, Acrobat).

Wide variety of OS's: *nix/Linux, Android, iOS, RTOS, Win, Mac OS/

Awards

Intel: Division, Group & Special Recognition Awards (2001, 2, 3, 4, 5)

NVIDIA: Master Inventor (>10 patents per yr, for >3yrs)

President Obama Volunteer Service Award

Education

Bundaberg High-School, Queensland Australia

Queensland University: Bachelor Science, Computer Sc.

Sth Brisbane College: Assoc. Dip Elect. Eng. Computer Electronics

Organization Memberships (past & present)

Society for Information Display (SID)

Society for Optics and Photonics (SPIE)

Society for Motion Picture & Television (SMPTE)

American National Standards Institute (ANSI)

Association for Computing Machinery (ACM)

Institute for Electrical and Electronic Engineers (IEEE)

Other Activities

Alpine & Backcountry Skier, Snowboarder and Split-boarder

Sailing (ASA certified Captain, Coastal Cruising, Bareboat Chartering)

Scuba diving (PADI certified Advanced Deep Water, Dry-Suit, Nitrox)

Track Car Enthusiast (C-Class)

Hospital Volunteer and Student Mentor

Languages

English, **Mandarin** (Chinese). Beginner Japanese. High-school German

General Interests

Photography, motor vehicles, energy, vegan food, art, 3D/VR GoPro