YUAN MENG

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**Summary**

Successful career reflecting pioneering expertise and visionary in the multimedia industry. Proven leader of design and development teams from product concept to delivery. Consistent success in various product developments and project managements as chief architect and industry specialist. Outstanding record of achievement leading to successful product launch, optimized market share, and improved profits. Recognized as an innovative, talented, results-driven industry expert who readily tackles complex challenges and exceeds expectations in challenging roles. The unique combination of the broad industrial technology insight, business strategy, project management, product architecture and hands-on development experience.

**Areas of Expertise**

* **Multimedia Streaming**

Technology:

* + - * Streaming Protocol: RTMP, RTSP, HLS, RTP, RTCP, SIP, SDP, HTML5, HTTP, XMPP, TLS, TCP, UDP, SSH, SSL;
      * Audio Video Codec Format: H.264, H.265(HEVC), MPEG2, JPEG, JPEG2000, VC-1, DIVX, AAC, MP3, WMA, WMV
      * UVC Driver

Framework:

x.265, x.264, ffmpeg, Wowza server, AWS, live555, Adobe Media Server, Red5, Apache Web Server, LinPhone, CDN, IPTV;

SDK & API:

* iOS: Hardware accelerated audio/video (h264) encoding/decoding, AV Foundation, Core Media, Core Video, Video Toolbox, Core Animation, Metadata handling, APNS;
* Andriod: Media Codec, NDK, RESTful, OpenMax OpenGL Es 2.0, Stragefright, GCM;
* Windows/Windows Phone: DirectShow, Windows Media Foundation, DMO, WAS, DXVA,

Projects Highlights:

* + **Gate Labs.** (San Francisco, CA 6/17-12/17): chief architecture designing, performance optimizing real-time audio video communication solution for smart door lock devices. Developed hardware accelerated decoder (iOS and Android) for rtsp/rtp stream.
  + **CyberData Corp.** (Monterey, CA 1/16-12/16): Developing the low latency Linux UVC (v 1.5) kernel driver for h264 based USB camera. Chief architecting and designing the real-time low latency VoIP solution for IP endpoint device based on LinPhone.
  + **iControl Networks Inc**, (Redwood City, CA 1/16- 2/16, 8/13-5/14): chief architecting and implementing low latency hardware accelerated rtsp/rtp playback solution (iOS and Android)*.*

Publish App:  *iControl OpenHome for iOS (Apple Store), iControl Networks for Android (Google Play)*

* + **Edcast Inc** (Mountain View, CA 1/16- 1/16): architecture review and performance enhancing for mobile rtmp streaming solution;
  + **Jumper** (Los Angeles, CA 06/14 – 11/14): Chief architecting and designing server and mobile solutions for: 1). the live broadcasting with instant replay for sports stadium; (the solution was deployed to Los Angeles Angels stadium in season 2015); 2) rtmp live video sharing for social media;
  + **Hewlett-Packard** (Palo Alto, CA 07/14 – 07/14): Reviewing and analyzing the existing corporation news center solution, enhancing media codec format and streaming protocol;
  + **Kineto Wireless Inc** (Milptias, CA 11/12-10/13): Chief architecting, designing and developing low latency, real time IP video communication framework for iOS, Android. Providing expert recommendation and solution on video format, video codec. Open Source licensing reviewing.
  + **AGX LLC** (Columbia, MD 1/13-3/13): Analyzing, optimizing and bug fixing on Windows based audio & video virtual driver solution for redirect RTMP streaming system.
  + **Snap One, Inc.** (Princeton, NJ 5/11-1/12): Invented the cloud based music, video and TV streaming service. Chief architecting end to end multimedia transcoding, redirecting and streaming solution. App Store: Snap Play (iOS),
  + **Intuitive Surgical** (Sunnyvale, CA 2/10 –8/10): Architecting and developing the real-time audio/video communication solution between surgical robot and Window based client.
  + **Optivision Inc**.(Palo Alto CA 2/00 – 12/03): Reviewing the design of all existing MPEG products. Developing VxWorks based set-top MPEG1/2 encoder/decoder, stream Mux/Demux, streaming protocols. Implemented Desktop MPEG streaming player.
  + **Burst.com** (San Francisco CA 4/99 –12/03): Responsible for both the technical vision and chief architecting on Burstware product, which is fault tolerant, highly scalable platform independent video server. It is the only product using a multi-tiered architecture and offers many advantages including: optimized end user experience, server efficiencies of up to 50 percent, no single point of failure and much more. Implemented Burst Enabled DirectShow Source Filter (Windows Media Player), Virtual Video Tuner Driver for MCE plug-in (Windows XP Media Center Edition), Real G2 Plug-in and QuickTime Component. Served as Codec Specialist on focusing on variety streaming media solutions for Burstware, i.e ASF, Real, MPEG2. Invented the “seamless advertisement insertion and clip switch” technology.
* **Video Audio Codec and Process**

Technology**:**

* Audio Video Codec Format: H.264, H.265(HEVC), MPEG, JPEG, JPEG2000, VC-1, DIVX, AAC, MP3, WMA, WMV
* Open GL, Open GL ES 2.0
* Echo Cancellation, Audio Mixing, Video Composition and special effects, image processing
* GPU Programming: CUDA, OpenGL;
* Cryptography, encryption (RSA, DES, AES, SHA-1)
* VDI Redirection, RDP
* Signal Process and DCT, IDCT, FFT, color conversion, motion estimation/compensation, image de-interlacing, interpolation, audio/video filtering, pattern recognition, 2D/3D transformation.
* SIMD Optimization: MMX, SSE2, SSE3 Optimization, ARM SIMD optimization;
* Video Quality Measurement: QoS, QoE, subjective/Objective video quality analysis;
* Device Driver: UVC, WDM, AVStream, Stream Class, OSX, WDF, BDA, UVC, KMDF, UMDF;

Framework: x.265, x.264, ffmpeg, GStreamer, OpenMax, DirectFB, SDL, ALSA, OSS

SDK & API:

* + Mac & iOS: Hardware accelerated audio/video (h264) encoding/decoding , QuickTime, AV Foundation, Core Media, Core Video, Video Toolbox, Core Animation, Metadata handling, APNS;
  + Andriod: Media Codec, NDK, RESTful, OpenMax, Stragefright, GCM;
  + Windows/Windows Phone: DirectShow, Windows Media Foundation, WAS, DXVA, DXVA2;

Projects Highlights:

* **DT VideoLabs.(** Scottsdale, AZ 7/16-3/18):Architecture reviewing, performance optimization and technology upgrade on OSX based professional, high-definition, nonlinear media player (PlaybackPro and PlaybackPro Plus).
* **Videocilious (**New York, NY 6/14-7/15, 8/11-12/12); Chief architecting and developing the Videocilious Video Application on Android and Windows: Videocilious Application is a revolutionary multimedia application for capturing, editing, compositing, transcoding, uploading and sharing audio, video and photo at professional production quality.
* **Brevity Ventures Inc (**New York, NY 10/12-1/13): Analyzing, developing, and CUDA/OpenCL optimizing the advanced, high quality and high performance video codec algorithm to meet human visual and perceptual system and the requirement of high end post production and distribution. Enhancing and improving the visually lossless aspects, filters, and other related image quality preservation technique.
* **Mobile Broadcast Network. (**San Francisco, CA, 9/11-7/12): Chief architecting, expert advising, leading development on audio video decoding/encoding quality improvement, performance enhancement and product deployment on AWS.
* **DigitalPersona (**Redwood City, CA 4/11-11/11):Chief architecting and developingh UVC based fingerprint acquisition and process pipeline, enhance and optimized the biometric image processing algorithm.
* **Teachscape Inc**, (San Francisco, CA 9/09 – 5/11): Chief architecting and leading development for revolutionary online professional teaching development systems (Reflect) which strengthens highly effective teaching practices. Reflect is a 360-panoramic high performance and HD audio video capture and publish system. With it, educators can both develop and share a common vision of effective teaching, and support individual teacher professional development with a dynamic new system for growing and learning.
* **Canesta Inc** (Sunnyvale, 11/09 – 12/10, CA 01/08 – 04/08): Lead Developing on 3D USB camera solution for Windows, Linux and OSX. Algorithm optimization on video decoding, 3D transformation and rendering. Overall software pipeline architecture. Low latency USB camera kernel driver development on Windows and Linux.
* **Sun Microsystems**, Menlo Park, CA 5/07 – 12/09): Innovated VDI redirection technology for multimedia (Windows Media Player and Adobe Flash Player) kernel device driver between the Windows Terminal Server and Sunray thin client. Chief system architecting on feature definition, communication protocol, media handling, and software vs. hardware balance. Key contributed to partnership collaboration and technology strategy. Technical mentoring and managing the multinational development teams.
* **Pearson VUE (**Minneapolis, MN, 05/08 – 09/09, 04/04-10/04): Chief architect and key leadership on multimedia framework, content encoding, decoding, and distribution for overall Pearson VUE test center. As a DRM expert, analyzing the security and performance requirement for multimedia content protection, designing the encryption/decryption framework and Meta data format balancing among security, performance and extensibility. Implemented the frame accuracy H.264/MPEG playback component. Technical guidance for the software developing integration team, collaborating partnership and customer relationship.
* **Hewlett-Packard** (Palo Alto, CA 05/08 – 07/08): Chief architecting, top level analyzing the feasibility for multimedia redirection in virtual desktop system. Providing the detail high level technical design and implementation plan to the corporation executives.
* **Logitech** (Fremont CA 11/05 – 05/06, 10/99-5/00): As an algorithm and performance optimization and codec expert, developing the Special DCT based codec, MJPEG codec, implementing UVC driver, optimizing on video processing and quality enhancement algorithm, SIMD (MMX/SSE2) optimization.
* **Logitech Inc** (Fremont, CA 7/04 – 12/04): Architecting and leading developing the speech audio enhancement and echo cancellation algorithms and its simulation component/container test module.
* **RGB Spectrum** (Alameda, CA 3/04 – 5/05): Architecting and designing MJPEG2000 streaming media system. MJPEG2000 algorithm implementation and optimization.
* **Technology Strategy, M&A Due Diligence and Patent Infringe Litigation**
  + - * Business strategic, market competition analysis;
      * Technology due diligence, M&A;
      * IP portfolio management and technology acquisition;
      * Solution architecting and optimizing;
      * Technology and patent analysis for litigation;

Projects Highlights:

* **Lewis Baach PLLC** (New York, NY 08/15 -10/15):
  + - * Provided the updated technology overview in industry;
      * study and discovery the relevant evidence for patent infringe;
      * built a software procedure to collect and analyze the evidence;
    - **Hosie & MaArthur LLP** (San Francisco, CA 01/08 -02/08):
      * provided the updated technology overview in industry;
      * studying the relevant intellectual properties and patents;
      * delivered independent expert opinion on matters at issue in the dispute;
    - **Symmetricomm** (San Jose, CA 10/06 – 10/07):
      * As a leading member on M&A strategy, execution and technology due diligence;
      * Intellectual Properties and patent analysis;
      * Business and technology competitive analysis;
      * Leading technology transfer, merge and integration;
      * As a video expert, providing the guideline on its new Quality of Service and Quality of Experience product line on IPTV and mobile TV market;
    - **Burst.com** (S.F. CA 4/99 –12/06):As a technical consultant for the legal team providing key technical guidance in the antitrust and patent infringe case since 2002, the case was settled at $65 millions in April 2005 with Burst’s satisfaction.

**System Experience and Proficiencies**

* Operating System
  + - * + iOS: Toolbox, AV Foundation, Core Video, Core Media, Core Audio, Core Animation, App store Application;
        + Android: SDK/NDK, Stagefright, OpenGL ES, Media Codec, Google Play Application;
        + Windows Mobile: Windows Media Foundation, Windows App Store Application;
        + Windows Desktop: DirectShow, Windows Media Foundation, Windows Media Center, DirectX, Direct3D;
        + Linux (Ubuntu, RedHat, Monte Vista, Fedora, Embedded Linux): UVC driver, QT programming;
        + OSX: QuickTime and AV Foundation, Sound, Cocoa framework, XCode**;**
* Programming Languages

C++, Objective C, Swift, Java, C#, MASM (MMX, SSE and SSE2), Linux assembly (Intel), Visual Basic, Python.

**Education**

* Ph D studies in Electrical Engineering on signal processing, University of California, Davis.
* Master of Science in Computer Science in June 1993 from Moorhead State University, Minnesota.
* Bachelor of Engineering in Electrical Engineering in July 1986 from Jiao-tong University, China.