Contact

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Top Skills

Large Language Models (LLM)
Deep Reinforcement Learning
Deep Learning

Certifications

Introduction to Marketing
Algorithm Analysis and Design - Part 2
Machine Learning
Algorithm Analysis and Design - Part 1

Patents

METHOD AND APPARATUS FOR CRASH RECOVERY AND RESYNCHRONIZATION

TECHNIQUES TO MANAGE A SUSBCRIBER IDENTITY MODULE FOR A MOBILE WIRELESS DEVICE

Anupam Kaul

Senior Engineering Leader @ Amazon | LLM & EdgeAI | OS Development | 500M+ Devices Shipped | Consumer Electronics & Robotics | Open to Director/VP Roles
Sunnyvale, California, United States

Summary

I've shipped 500M+ devices across 25 years — from chips to operating systems to AI-powered consumer products.

My career has spanned the full stack of innovation: ASIC design at Renesas, cryptographic SIM card OS development at Schlumberger/Gemalto, building Palm webOS from scratch for smartphones and tablets, reviving and scaling webOS for LG Smart TVs (now in millions of homes), and most recently, leading Amazon's Vega OS development for Echo and FireTV devices.

What I bring to organizations:

At Amazon, I lead teams building our next-generation AI/LLM stack for edge devices — optimizing inference for on-device intelligence across Echo and FireTV products. I've built and scaled engineering organizations from the ground up, including LG's Silicon Valley innovation lab where I incubated robotics, deep learning, and mixed reality products that opened new business verticals.

I've developed three proprietary operating systems from zero: Axalto's SIM card OS, Palm/LG webOS, and Amazon Vega OS.
I understand what it takes to ship at scale — the architecture decisions, the team building, the cross-functional alignment, and the relentless focus on customer experience.

Technical depth: Large Language Models (LLM) • Edge AI/ML Inference • Deep Learning • Operating Systems Architecture • Graphics/Multimedia Systems • Embedded Systems • Robotics

Leadership scale: Built and led teams of 200+ engineers • Launched products generating billions in revenue • Established engineering cultures that outlast my tenure

I'm currently exploring senior engineering leadership opportunities (Director, VP, Head of Engineering) where I can drive the next wave of AI-powered products. Particularly interested in roles at the intersection of AI/ML and consumer devices, robotics, or automotive.

Open to connecting: anupam.kaul@yahoo.com

Experience

Amazon

Senior Engineering Manager - Amazon Devices and Services
July 2020 - Present (5 years 8 months)
Sunnyvale, California, United States

Led development and global launch of Amazon Vega OS, the next-generation operating system powering Echo devices and FireTV sticks — my third ground-up OS development (following Palm/LG webOS and Axalto's SIM card OS).

Core AI/LLM: Building native AI/LLM inference stack optimized for edge deployment across Amazon's consumer device ecosystem. Developing agent-based development paradigms for application developers.

Platform Leadership: Own core stacks for EdgeAI, Multimedia, Graphics, Camera, 3D game engines, and Native SDK for Vega OS. Led development and certification of top 10 highest-engagement applications on FireTV accounting for 85% global MAU.

Scale: Responsible for technology powering devices in tens of millions of homes globally all the way from Silicon to OS to Applications. Cross-functional leadership spanning engineering, product, and partner development.

Key Technologies: LLM inference optimization, Edge AI, Multimedia, Graphics/ composition, Camera, 3D game engines, Partner SDK development, Top-tier content providers' application development.

LG Electronics

7 years 5 months

Head Of Engineering - Product and Services Innovation Group
March 2017 - July 2020 (3 years 5 months)

San Francisco Bay Area

Built and led LG's Silicon Valley innovation product & engineering organization from inception. Established new business verticals in Robotics, Deep Learning, and Mixed Reality through end-to-end pilots, product development, and acquisition of entirely new customer verticals for LG. Responsible for the incubation lab that reported to the GM

Org Building: Grew engineering teams encompassing Advanced Technologies (Deep Learning, AR, Robotics), Cloud Services, and Applications. Created sustainable engineering innovation culture that continues today. Closely partnered with HQ product, marketing and sales verticals for new customer aquisition and to scale out the pilots.

Business Impact: Conceptualized and delivered multiple pilot programs opening new customer segments for LG Electronics. Led acquisition integration and incubation programs including university partnerships

Technical Scope: Proprietary deep learning model training and deployment, robotics systems, augmented/mixed reality platforms

Senior Engineering Manager - Platform Incubation (LG Home Appliances and LG Automotive)

March 2016 - March 2017 (1 year 1 month)

Santa Clara CA

Led LG Silicon Valley Lab's foray into the Automotive Platform (In Vehicle Infotainment and advanced technologies) with pilots for some key vehicle customers of LG. This effort translated to the LG webOS for Automotive program.

Led platform teams to put webOS on LG's consumer product road map for Home Appliances (LG webOS Fridge) which was showcased at CES 2017.

Delivered platform solutions for the next version of webOS for Smart TVs and Digital Signage based products.

Engineering Manager, webOS Platform (LG Smart TV and LG Wearables)

March 2014 - March 2016 (2 years 1 month)

Santa Clara CA

Delivered two versions of the webOS platform (2.0 and 3.0) to support Smart TVs and Wearables for different business units within LG. WebOS 3.0 was

showcased in CES 2016. I also formed developer alliances for the app ecosystem, and led webOS evangelization efforts resulting in partnerships for LG.

Engineering Manager - webOS Graphics and System UI (LG Smart TV)
March 2013 - March 2014 (1 year 1 month)
Sunnyvale CA

With LG acquiring the webOS division from H.P, and having worked on webkit and browser stacks, I shifted my focus more into System UI / Graphics / Rendering and Composition, while ensuring that both web and native apps executed smoothly on a new brand of webOS for the Smart TV.

From a graphics performance aspect, I was chiefly responsible for reviving webOS within L.G. and ensuring its popularity for the Smart TV. I introduced Wayland and QML technologies to webOS, and led engineering teams for UX graphics stack and native plugin development for webOS Smart TV. I hired the best globally, and led and drove a world class shipping TV product in 2014.

I specifically led and managed the engineering teams that developed the new webOS Surface Manager and System UI for the 2014 LG webOS Smart TV showcased at CES 2014. We completely overhauled the existing graphics and designed a new Wayland and QML based graphics stack and compositor for the core UI of webOS to deliver fluid animations on the TV. I also introduced a new application development framework using QML for faster and fluid UI and for smooth animations.

My team created the new webOS Launcher, Cards, Ribbon, Home, Notifications and most of the System UI graphics, animations and paradigms for the webOS Smart TV. The system components (UI and stack) that we developed provide the framework for rendering high performance GPU friendly webOS applications on the Smart TV.

webOS
Software Product Architect, Eng. Team leader - webOS Platform (Palm Smartphones, HP Tablets)
March 2010 - March 2013 (3 years 1 month)
Sunnyvale CA

I spent the next 6 years of my life involved in the bring-up of the unique and beautiful webOS platform for the Palm Pre (introduced at CES 2009), Pixie, Pre 2, Pre 3, Veer, and the H.P. Touchpad devices, as well as various unreleased models from Palm. webOS to this day lets its elemental design

influence Android and IOS platforms. I am proud to have been a part of this journey.

As an engineer at Palm and later at H.P., I worked on many areas of the webOS stack, starting from wireless and telephony protocols to the webOS Browser, QtWebkit, Enyo (the JS application framework for webOS), System Manager (the webOS Card interface), the native PDK (for 3D native games), and various webOS Enyo (JS) Apps themselves like the phone-app and the first ever fully integrated Skype experience on a tablet.

Worked on all versions of webOS smartphones and tablets, and on openWebOS. Worked in the capacity of an engineer and an architect, and eventually took on a team lead/manager role in growing new teams.

HP webOS Touchpad - Team lead for Phone and Skype user experiences on the tablet (The UI + the full software stack on webOS) as well as integration of the tablet with Palm smartphones, Lead for integration of webOS tablets and phones (Touch to Share feature using Bluetooth). Worked on some unreleased webOS tablets.

Palm, Inc.
Senior Software Engineer - webOS for Palm Smartphones
October 2006 - March 2010 (3 years 6 months)
Sunnyvale, California, United States

Palm webOS SmartPhones - As a lead engineer I was responsible for the webOS Telephony stack and modem development. I architected and developed independent areas of the Palm webOS Telephony-Modem Protocol Stack, extended this software for multiple modem vendors, brought-up different webOS phones (Palm Pre, Pre2, Pre3, Pixie, Veer and other unreleased phones), and independently developed Palm's software radio simulator (Virtura) for the Palm SDK Emulator. I designed for world mode (UMTS + CDMA), I created automation platforms using Expect for wireless certifications. I then took ownership application stack development (webOS Phone App) and wireless integration. Eventually moved from wireless stacks onto the web browser, graphics & media, and UI development with Enyo.

Schlumberger (Axalto)
R&D Engineer - OS, Cryptography, GSM SIM/USIM cards
April 2003 - April 2006 (3 years 1 month)

After working on chip design, I moved into an embedded application of the chip: The SIM card, and the Credit/Debit card. In addition I also got involved in internal workings of proprietary operating systems (non-Linux). I developed fundamental APDU, Cryptography, File mechanisms and Memory Management building blocks for Axalto's proprietary OS with minimal memory footprint. As a nice side effect, I was also deeply exposed to the GSM protocol, and how the SIM card operates with the mobile network, as I had to read and understand numerous 3GPP specifications.

2004 - 2006: In Paris, France, I worked as a core OS developer for Gemalto's proprietary SIM/USIM 3G card OS. (C/C++). I was involved in the core implementation of the APDU set used in SIM cards, its unique file system implementation (AF/DF), memory management features and a native Java Card Virtual Machine that was integrated into SIM/USIM cards used by all the major phone manufacturers today.

2003-2004: In Beijing, China, I developed secure algorithms targeted for EMV / Mastercard Java Smart Card (Credit/Debit Cards) developed by Schlumberger. The algorithms and the product is used by MasterCard today. Prior to that In India, I worked on getting a smart chip operating system certified by the Government for Smart Card / Smart Chip based driver licenses (SCOSTA). This project was adopted and deployed in millions of licenses in India.

Renesas Electronics America

R&D Engineer - Chip Design, RTL, Compiler Backends

January 2000 - March 2003 (3 years 3 months)

Fresh out of college, I worked on Hitachi's (Renesas) SH4 / SH5 RISC Processor SOC Design Verification in India and later in San Jose, CA. This was for the SH series of Hitachi / Renesas chips.

I wrote numerous components of an RTL validating SOC cycle-accurate pipeline and peripheral simulator for Hitachi/Renesas. Among other things. I analyzed dual-pipeline instruction set CPU RISC architectures and its performance, coded cache coherency algorithms, Wrote RTL simulators for PCI, Flash, DMA, I2C, CAN, AMBA, and other bus protocols. wrote various tools involved in a new processor bring-up (including some powerful random instruction transaction generators in PERL) but mostly using C/C++ / Verilog / Assembly coding for SH chips. I also wrote NetList to NetList converters between different hardware languages using DFA and Yacc.

I also did some backend coding for a GCC compiler version of the chip. I coded up numerous hardware drivers and programmed register bits. I was involved in ASIC and FPGA designs, and IPMI board bring-up for intelligent power distribution. All in all I got to see the internal functioning of the brains of a chip.

Education

Udacity

Nanodegree, Robotics · (2018 - 2019)

Birla Institute of Technology

Masters, Computers · (1997 - 2000)

Delhi University

Bachelor's, Electronics · (1994 - 1997)