



## Gurmeet Singh

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### Summary

*I have over 25 years of leading edge technical experience both as a leader and an individual contributor with a record of highly effective, flawless and prolific execution. My strengths include good communication and analytical skills, breadth of knowledge and ingenuity.*

### Experience

#### **[18-19] Consultant, Confidential.**

- . Physical design methodology for a 7nm Machine Learning SoC. Design of global clock distribution network, spice modeling/simulation and ICC2 implementation. Setup custom compiler schematic and netlisting environment. Characterize PVT sensitivity of level shifters with spice simulations. Set up Redhawk seascape flow for EM/IR. Own a million gate low voltage design for place and route.

#### **[16-17] Consultant, ZGlue Inc.**

- . Physical design methodology and netlist-to-gds flow development in tcl using Cadence toolset. Also Assura physical verification and logical equivalence (lec) flows.
- . Hierarchical implementation of an instance array design including floorplanning, power grid, pin placement, place and route, logical equivalence and physical verification.
- . Abstract generation of analog macros and hierarchical instance to allow for through the block routing.
- . Mixed-signal custom CAD support including SKILL programming
- . Setup Virtuoso QRC extraction flow for full chip STA, set up and run full chip STA with Tempus, set up and run full chip LEC with Conformal. Silicon success.

#### **[15-16] Machine Learning/Software Engineer**

- . Data Science/Machine Learning/Programming Student - See courses below
- . Kaggle Participant (<https://www.kaggle.com/gary347>)
- . Swift iOS Programming

#### **[13-14] Qualcomm Technologies, Senior Staff Engineer**

Top level floorplan, power grid with multiple power domains, using CPF/UPF for a mixed signal design, automated floorplan generation with Tcl. Wrote power intent CPF from scratch. Full chip formal (LEC) and low power (CLP) verification using Cadence tools. Apache Redhawk EM/IR debug and fixes. My leadership enabled a rare ahead of schedule tapeout. Silicon success (WCD9335).

**[12-13] Cadence Design Systems, Staff Application Engineer**

Developed complete, automated rtl2gds flow (14nm/finFET) using Cadence tools. Using the same, implemented an ARM A9 design @ 2.4GHz. Implemented a 28nm DDR-PHY IP for tapeout.

**[11-12] Sandforce Inc., Principal Engineer**

- . Developed a 40 nm automated and optimized, tapeout ready, Cadence based implementation flow.
- . Wrote Tcl scripts for a correct by construction, tunable flow used for all blocks.
- . Developed automated, tapeout ready, STA setup using Primetime-SI using Tcl/Perl scripts.
- . Implemented several large blocks at tapeout quality using the above flow ; the resulting GDSII were timing, LEC, LVS/DRC clean. Silicon success.
- . Helped grow the size and capability of the physical design team and lead technical direction.

**[08-11] Contractor/Engineer @(multiple)**

- . Setup 40nm Cadence based, automated, tapeout ready, block level implementation flow.
- . Hierarchical physical implementation flow in 65nm technology using Cadence.
- . Telecom ASIC: Implementation of two large blocks using Magma. Silicon Success.
- . 65nm WiFi ASIC: Implementation of large block using Magma. Silicon Success.
- . 65nm WiFi ASIC: Full chip EM/IR signoff using Apache-Redhawk. Silicon Success.

**[06-08] Teranetics, Principal Engineer**

130nm/65nm 10GBASE-T PHY ASIC: Implement many large blocks, some using x-route. Automate implementation, static timing analysis, logical equivalence and physical verification flows. Power estimation; power reduction using special cells. Silicon Success.

**[04-06] Airgo Networks, Physical Design Manager**

Multiple WiFi ASICs: Implement many blocks using Magma. Automate PTSI STA, formal, Calibre PV flows. Full chip EM/IR signoff using Apache-Redhawk. Tapeout signoff/jobview. ECOs, I/O Spice sims, IP integration, Methodology, project management. Silicon success.

**[01-04] Transmeta, senior Member, Technical Staff**

1.2/1.8GHz Efficeon CPUs: Implement Hypertransport PnR blocks; Register File design. ECOs. Setup latch compatible STA flow. Array and noise methodologies. Silicon Success.

**[99-01] Sun Microsystems, Member, Technical Staff**

- . UltraSparc V CPU: CAM Register File, Custom logic circuit design
- . 1.2GHz UltraSparc III CPU: Port a dozen 130nm dynamic circuit blocks, including adders up to 64-bits, from 180nm to 130nm. Silicon success.

**[97-99] Intel Corporation, Design Engineer**

- . 833MHz Pentium III Xeon CPU: High speed dynamic circuit design for L2\$ ECC, L2\$ STA/EM/IR verification. Silicon success.
- . 600 MHz Pentium III CPU : GTL I/O circuit design. Silicon success.

**[94-97] ST Microelectronics, Design Engineer**

Circuit Design of 32kx8, 128kx8 SRAMs. Silicon success. CAD setup. Reverse engineer a register file and re-implement, verify functionality using verilog switch level simulation. Silicon success.

**Education**

I was the best student in my class for all seven years of college level education, including four at India's premium engineering institution.

**[2015-2016]: Online Coursera Courses**

- . Machine Learning
- . Machine Learning With Big Data
- . Practical Machine Learning
- . R Programming
- . Statistical Inference
- . Reproducible Research
- . Regression Models
- . Functional Programming Principles in Scala
- . Object Oriented Programming in Java
- . Financial Markets
- . Graph Analytics for Big Data
- . Hadoop Platform and Application Framework
- . The Data Scientist's Toolbox
- . Getting and Cleaning Data
- . Exploratory Data Analysis
- . Developing Data Products
- . Introduction to Big Data
- . Introduction to Big Data Analytics
- . HTML, CSS and Javascript for Web Developers

**[12/2006] U.C. Berkeley Evening Course**

Introduction to Digital Signal Processing Course, UC Berkeley, A Grade

**[1989-93] M.Engg., Electrical Comm, Indian Institute of Science.**

First class with distinction. Alumni medal, Best Student, 1990-93

**[1986-89] B.Sc., Physics, Delhi University.**

First class with distinction, Gold medal, Best Student: 1987/88/89.