

Thomas Brooks

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Summary

Experienced engineer dedicated to excellence in FPGA design, PCB design, and embedded software. Expertise includes: FPGA and ASIC design including HDL, simulation, synthesis, timing analysis, and implementation; embedded software design; PCB-level design, verification, and debug, system level architecture and design; project management including technical, schedule, and resource management; and vendor management. Domain knowledge includes RADAR, EW, wireless communications, storage and industrial automation.

Active secret clearance.

Experience

NOW Solutions, Embedded Engineering Consultant, 2014 - present

Provided embedded engineering consulting services focusing on RADAR technologies. Performed system engineering, implementation, integration, and formal test using MATLAB, linux scripting, and C++.

Performed FPGA design services targeting Xilinx 6, 7, Zynq, and UltraScale series FPGAs (Virtex, Kintex and Spartan devices). Designs included signal processing, 40GE, 10GE, 1GE Ethernet, DRAM, SRAM, Microblaze processor, and a variety of proprietary hardware interfaces.

Barr Group, Senior Engineer, 2013-present

Provided technical consulting services for patent litigation including LTE base station technologies, LTE UE technologies, automotive and web services.

Provided embedded systems technical training.

ADI Engineering, Senior Staff Engineer, 2005- 2014

Participated in a team providing hardware and software design services to a wide variety of customers.

Managed service projects including schedule development, budgeting, and customer interface.

Performed system level architecture and system design on numerous projects including cost, thermal, mechanical, and performance analysis.

Performed FPGA design services targeting Xilinx Virtex6, Virtex4, Spartan6, Virtex2E, Altera Stratix IV, Cyclone IV, and wide variety of CPLD technologies. Designs included DSP design, 10GE using XAUI (rocket IO), 1GE Ethernet using SGMII, DRAM, SRAM, Reed Solomon ECC, Aurora, beamforming, 405, Microblaze processor, and a variety of proprietary hardware interfaces.

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Performed FPGA simulation including testbench development, white box testing, and performance analysis. Completed board level designs using Mentor Graphics DxDesigner and Orcad Capture. Designs included FPGA, 440GX, power supply, DDR, DDR3, 10GE, 1GE, ADC, DAC and other proprietary hardware technologies.

Completed board level layout using Mentor Graphics Expedition. Designs included boards up to 14 layers, blind and buried vias, and high speed serial interfaces.

Completed a variety of software designs using C and Assembly. Designs included Ethernet/IP controller on a 405 processor embedded in an FPGA and a Ubuntu linux video driver on an Intel Atom processor.

Intransa, Systems Design Engineer, 2001 – 2005

Participated in initial system level design work including developing proof-of-concept prototype design used to obtain first round funding.

Designed a large portion of Ethernet to ATA conversion FPGA including all Ethernet, fail-over, memory control, DHCP, EEPROM, and register logic.

Designed a large portion of embedded software that processed proprietary ATA over IP protocol. Spearheaded cost reduction effort, which included reducing FPGA design size by converting large portions of hardware based logic to embedded software.

Simulated, synthesized, and implemented FPGA design into various size and speed-grade chips.

GE Fanuc, Electrical Design Engineer, 2000 – 2001

Designed a 13000 gate ASIC and 5000 gate ASIC to interface microprocessor with industrial computer circuitry.

Designed firmware to implement Profibus network connectivity of an industrial controller.

IBM, VLSI Design Engineer, 1998-2000

Participated in a design team creating new Gigabit Ethernet switch. Designed Ethernet MAC for 10/100 Megabit and Gigabit Ethernet.

Ericsson, Co-Op Student, 1994 – 1997

Participated in a design team implementing ASIC to control TDMA digital radio. Performed various wiring, debugging, and soldering tasks.

Patents

US Patent # 6,384,753 – “High Density Analog Interface”

US Patent # 7,072,823 – “Method and apparatus for accessing memory using Ethernet packets”

Degrees

BS Computer Engineering, Cum Laude, *Virginia Tech*, 1998

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Client List

Ultra Electronics, 2018-Present

- Provided engineering consulting services for military RADAR systems

Shenandoah Solutions, 2014-Present,

- Provided engineering consulting services for military RADAR systems

Barr Group, 2013-Present,

- Provided engineering consulting services as embedded expert

RMB Consulting, 2017-Present

- Reviewed source code for litigation involving satellite radio, LTE, fiber optic communication

UCT, July 2024 – Present

- Reviewed source code for litigation involving Display Port and USB

Cases at issue o UCT v Lenovo o UCT v HP o UCT v Dell

UCT, July 2024 – Present

- Reviewed source code for litigation involving Display Port and USB

Cases at issue o UCT v Lenovo o UCT v HP o UCT v Dell

Neo Wireless, Jan 2023 – Present

- Reviewed source code for litigation involving 4G/5G technology

Cases at issue o Neo Wireless v Car Manufacturers

WPI, Feb 2023 – Present

- Reviewed source code for litigation involving 4G/5G technology

Cases at issue o WPI v TCT

Nokia, Nov 2021 – Present

- Reviewed source code for litigation involving wired communications

Cases at issue o TQ Delta v Nokia, o Correct Transmissions v Nokia, o Smart Path v Nokia o Nokia v Amazon/HP

Collabo, Nov 2022 – Present

- Reviewed source code for litigation involving power control of processors

Cases at issue o Collabo v AMD o Collabo v Qualcomm

Mosaid, Sep 2023 – Present

- Reviewed source code for litigation involving power control of processors

Cases at issue o Mosaid v Mediatek

Trend Micro, Jun 2022 – Dec 2023

- Reviewed source code for litigation involving virus detection

Cases at issue o Webroot v Trend Micro

XTI, May 2023 – Dec 2023

- Reviewed source code for litigation involving power control of processors

Cases at issue o XTI v Renesas

TikTok, Sep 2022 – Present

- Reviewed source code for litigation involving online videos

Cases at issue o Meishe v TikTok

Evolved, Mar 2023 – Present

- Reviewed source code for litigation involving 4G/5G technology

Cases at issue o Evolved v Samsung

Lionra, Oct 2022 – Present

- Reviewed source code for litigation involving networking

Cases at issue o Lionra v Apple o Lionra v Cisco

Innovations In Memory (IIM), May 2024 - Present

- Reviewed source code for litigation involving storage

Cases at issue o IIM v Dell o IIM v IBM o IIM v Cisco

Sonrai, Sept 2022 – Present

- Reviewed source code for litigation involving flash technology

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- Cases at issue o Sonrai v Micron
Boston Dynamics, Nov 2023 – Present
- Reviewed source code for litigation involving robotics
- Cases at issue o BD v Ghost
Togail, Sept 2022 – Dec 2023
- Reviewed source code for litigation involving 4G/5G technology
- Cases at issue o Togail v Apple
Speir, Mar 2022 – Dec 2023
- Reviewed source code for litigation involving wireless payment
- Cases at issue o Speir v Apple
Honeywell, Feb 2023 - Present
- Reviewed source code for litigation involving industrial software
- Cases at issue o Honeywell v Voxware
Probo, Aug 2023 – Sep 2023
- Reviewed source code for litigation involving medical devices
- Cases at issue o Phillips v Probo
Google, Oct 2022 – May 2023
- Reviewed source code for litigation involving smart speakers
- Cases at issue o Google v Sonos
Polaris, Jun 2023 – Dec 2023
- Reviewed source code for litigation involving memory control
- Cases at issue o Polaris v Broadcom
IPT, Mar 2023 – May 2023
- Reviewed source code for litigation involving Imaging processing
- Cases at issue o IPT v LG
Unification Technologies LLC, Jun 2021 – Mar 2022
- Reviewed source code for litigation involving solid state drives
- Cases at issue o UTL vs Micron
Ericsson, Jun 2021 – Present
- Reviewed source code for litigation involving LTE technologies
- Cases at issue o Collision v Ericsson, o Apple v Ericsson, o Ericsson v Motorola, o Ericsson v Lenovo o Ericsson v KPN o
Howlink v Ericsson o GAS v Ericsson o Pegasus v Ericsson
- Reviewed source code for litigation involving Wifi technologies
- Cases at issue o XR v Samsung,
Collision Sept 24 – Present
- Cases at issue o Collision v Samsung,
Aire, Mar 2022 – Present
- Reviewed source code for litigation involving wireless payment
- Cases at issue o Aire v Samsung, Apple
Verkada, Nov 2021 – Sep 2022
- Reviewed source code for litigation involving Video cameras
- Cases at issue o Avigilon v Verkada
Zebra, Nov 2021 – Nov 2022
- Reviewed source code for litigation involving Bar Code Scanners
- Cases at issue o Honeywell v Zebra
Q3 Networks, Feb 2021 – April 2022
- Reviewed source code for litigation involving network processors
- Cases at issue o Q3 vs Netgear
Divx, Apr 2021 – Jan 2022
- Reviewed source code for litigation involving video encoding

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- Cases at issue o Divx v Mediatek
Verizon, Feb 2021 – Apr, 2022
- Reviewed source code for litigation involving wired networking
- Cases at issue o Huawei v. Verizon
WiLan, June 2020 – Jan 2021
- Reviewed source code for litigation involving baseband processors
- Cases at issue o WiLan vs Motorola
Clear Imaging, May 2020 – Jul 2021
- Reviewed source code for litigation involving camera technologies
- Cases at issue o Clear Imaging vs Samsung
Panoptis, Aug 2019 – Sep 2022
- Reviewed source code for litigation involving baseband processors
- Cases at issue o Panoptis vs Apple
Sirius/XM, 2017- Present
- Reviewed source code for litigation involving Satellite Radio
- Cases at issue o Fraunhofer vs. Sirius/XM
HTC, May 2019 – Present
- Reviewed source code for litigation involving baseband processors
- Cases at issue o HTC vs 3G Licensing, et al
Canon, Jan, 2020 – June 2020
- Reviewed source code for litigation involving television processors
- Cases at issue o Canon vs TCL
Qualcomm, 2017- April 2019
- Reviewed source code for litigation involving baseband processors
- Cases at issue o Qualcomm vs Apple