

Brian C. Richards

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ACADEMIC EXPERIENCE

- 6/83 - 4/86 **University of California at Berkeley**, MSEE *Berkeley, CA*. Graduate Student Researcher.
Developed a CAD design environment for Silicon Assembly, and used the system to build a real-time 10MHz image histogram processor.
- 8/80 - 6/83 **California Institute of Technology**, BSEE *Pasadena, CA*. Teaching Assistant
Semiconductor manufacturing lab (3 years), Digital Signal Processing lab (1 year), Digital circuit design lab (1 year).

INDUSTRY EXPERIENCE

- 11/99 – present **Berkeley Wireless Research Center**, *Berkeley, CA*. Research and Development Engineer
Founding member of the technical research staff, working with the Executive Director on many aspects of starting a center, including location selection, facility design reviews, infrastructure planning, web site development.
BEE (Berkeley Emulation Engine): Provided consultation for the BEE and BEE2 system design teams; Co-developed the Insecta design flow with Dr. Kimmo Kuusilinna to allow FPGA designs to be mapped to ASICs; developed technology files for commercial CAD tools to enable the use of state-of-the-art CAD tools for digital ASIC design. Collaborated with BWRC faculty to establish and follow through on design-flow related research grants from DARPA and NSF to support related research efforts.
CAD Tool, Technology, and General BWRC Support: Coordinated CAD tool and technology IP licensing, installation and support, creating interactive BWRC web pages and a WIKI for controlling access to NDA materials. Provided backup for the System Administration staff and the Executive Director.
Sensors and image processing: Collaborating with autonomous vehicle researchers, reviewing sensor fusion including 3D Flash Ladar and mm-wave radar technology.
- 1/93 – 11/99 **University of California at Berkeley**, *Berkeley, CA*. Programmer/Analyst IV
Developing a wireless multimedia terminal called the InfoPad, for Prof. Robert W. Brodersen. Designed and supported several network-based servers, including an X11R5 graphics display server, which communicates with the InfoPad to provide basic multimedia functionality. Designed the portable terminal and base station circuitry, and one of 13 custom low-power chips. Interfaced mechanical CAD tools (solids design and modelling, and Finite Element Mesh analysis) and electrical CAD tools (schematic capture, PCB design, silicon compilation) for package and PCB design..
- 4/86 - 1/93 **University of California at Berkeley**, *Berkeley, CA*. Programmer/Analyst III
Co-developer of the LagerIV VLSI design tool suite funded by DARPA for Professor Robert W. Brodersen. Co-authored the design manager, DMoct, with Prof. Rajeev Jain. Wrote and maintained several CAD tools for data format conversion, VLSI pad routing, C-language based tiling and macrocell floorplanning. Designed DRAM and data path circuit libraries. Used and enhanced the LagerIV tools to assist graduate students with the design of complex VLSI and PCB systems, including a 60,000 word, continuous speech recognition system, a robot controller, and a Radon Transform computation engine. Developed ASICs, PCBs and a custom user interface for a custom real-time image processing system.
- SKILLS:**
- Custom VLSI, ASIC, PCB system design, simulation, manufacture, debug of digital systems.
 - Programming: Java, C++, C, shell, TCL/TK, Pascal, Basic, LISP/Scheme, Assembly, PS. Compiler, Database, OS, Graphics design.
 - CAD: Maintains commercial FPGA and ASIC design tools, flows, and foundry support for common technology. Designed custom digital signal processing designs in 45nm – 180nm technology from STMicroelectronics and TSMC..
 - Operating Systems: Windows, Solaris, Linux, HPUX, HELIOS, NT, VxWorks.
- REFERENCES:** Available on request.