RÉSUMÉ OF BRET VICTOR

1117 Shenandoah St. #5, Los Angeles, CA 90035 (310) 859-0774
bret@ugcs.caltech.edu
http://www.ugcs.caltech.edu/~bret

EDUCATION

University of California at Berkeley, Berkeley, CA — *8/99 – 5/01*
   Received EECS dept. fellowship; graduated with a MS in Electrical Engineering
   Thesis: *Bus Encoding to Prevent Crosstalk Delay.*
      A rigorous mathematical analysis of "self-shielding code theory", a novel
      technique for reducing the delay due to digital crosstalk on an on-chip bus.

California Institute of Technology, Pasadena, CA — *9/95 – 6/99*
   Graduated with a **3.9 GPA** and a "BS with Honors" in Electrical Engineering

Castro Valley High School, Castro Valley, CA — *9/91 – 6/95*
   Graduated with 4.2 GPA and "High Honors"
   Also took college-level math classes at Las Positas Junior College

WORK

Design Engineer: Alesis Studio Electronics
   Designed and implemented the sound engine for an analog-modeling synthesizer. — *9/02 –*
   Currently in charge of project management and all product, interface, hardware,
   software, and FPGA design for another upcoming synthesizer.

Research Assistant
   Electronic Design Automation research under Professor Keutzer of UC Berkeley — *9/00 – 5/01*
   Rotation sensor design under Professor Ostrowski of the University of Pennsylvania — *6/00 – 8/00*
   Research in autonomous robotics under Professor Goodman of Caltech — *6/98 – 8/98*

Teaching Assistant
   EE 4: Introduction to Digital Electronics, and EE 167: Data Compression — *9/97 – 3/98*

Freelance Software Designer
   Designed and programmed over 30 titles for the Apple IIgs. — *9/95 – 12/96*

SKILLS AND EXPERIENCE

I've built…

- a digital audio recorder with oscilloscope
- a device to crack combination locks by punching in all possible combinations
- an infrared wireless audio transmitter and receiver
- an "air guitar", a wireless electronic musical instrument
- a freespace rotation sensor
- a device for turning on an air conditioner with a phone call
- a full-custom VLSI design that acts as a graphics processor and LED matrix driver
- a computerized Coke machine (www.cs.caltech.edu/~bret/coke)

I've written…

- software in C, C++, Java, Perl, and nine assembly languages
- two embedded operating systems
- compilers and assemblers for various languages I designed (bkasm.sourceforge.net)
- a web server and online radio station management program (lloydradio.caltech.edu)
- an industry-leading analog-modeling sound synthesizer, with multiple oscillators, LFOs, envelopes, and modulation routes (alesis.com/products/Ion)

I've studied…

- analog and digital integrated circuit design (use of `hspice`)
- VLSI (use of `magic`)
- programmable logic design (use of Verilog and VHDL)
- computer processor architecture
- computer-aided design for VLSI
- A/D and D/A converter design
- logic synthesis
- digital signal processing
- microprocessor system design
- 3D computer graphics
- information theory
- data compression
- communications
- complex analysis and transforms
- electromagnetics
- solid-state physics

Please see http://www.ugcs.caltech.edu/~bret/portfolio.html for details.

MISCELLANEA

- Twenty years piano-playing experience; ability to compose, improvise, or sight-read from "fake books"
- Three years high school and two years college varsity track; high school league 100m champ