



BRET VICTOR

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http://worrydream.com (Portfolio.)

GOAL

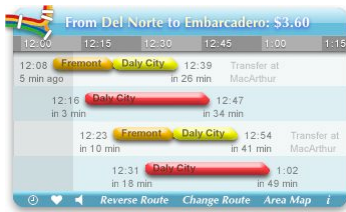
I intend to revolutionize **how people learn** (as did William Playfair) and **how people create** (as did Bill Atkinson). I will use my design skills to invent creative new **human-interface concepts**, and my engineering skills to realize them.

DESIGN



ClickShirt. I designed and implemented this online T-shirt design app for CafePress.

User comments: "I absolutely LOVE this website." "An amazing site and experience." "Un-friggen-believable." "Fantastic. Easiest to use tshirt designer I could find by far." "This is AWESOME. Fantastic job, one of the best Web apps I've used." "Extremely innovative and user-friendly, creative, and a masterpiece in the making." "The best website (or application) I have ever seen." "holy fucking shit. amazing." And hundreds of similar comments.



BART widget. I designed and implemented this train trip scheduler with novel UI.

Won an Apple Design Award, and MacWorld's rare 5-star rating.

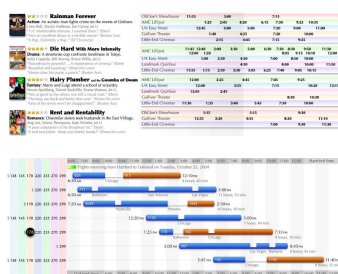
User comments: "WOW - I absolutely LOVE IT! Oh my god... it's the most amazing piece of widget I've seen!" "Without doubt, this widget has the most innovative interface I've seen." "You are freaking amazing. This is the best widget I've seen." "Spectacular ... just about the coolest widget design ever." "This is a stunningly beautiful, functional and user-friendly widget." And a hundred more.



Alesis Micron. I designed and implemented this analog-modeling synth/groovebox.

Won Keyboard Magazine's "Key Buy" award. Has been a best-seller for three years.

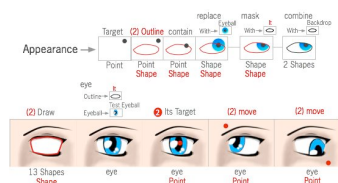
Customer comments: "This is an amazing synth and I don't know what I'd do without it ... it has become one of my most loved synths, ever. The best synth I've ever bought..." "This is the best VA made to this day, no question." "It blows my mind what it is that I'm capable of doing with it." "It has a great interface, much better than any mini synth I've used." And so on.



Magic Ink: Information Software and the Graphical Interface. I wrote this 70-page paper on a revolutionary approach to UI. Includes seven extensive design examples.

Microsoft used a design from this paper for the keynote introduction of Silverlight.

Reader comments: "Pretty much the best software design paper ever written." "The only document I've read that compares with Edward Tufte." "A landmark article ... hands-down, the most important thing I've read in 24 years of software work." "This should be required reading for all UI designers and software developers." "This is some of the most amazing graphical interface redesigns I've ever seen."



Substroke. I am designing a novel visual language. It allows artists to directly draw dynamic (data-dependent) graphics, using standard drawing tools rather than code.

This is an independent research project, and has not yet been publicly released. Details are available upon request.

Education

MS in Electrical Engineering, **University of California at Berkeley**, Berkeley, CA. (1999-2001)

Awarded EECS department full fellowship.

Thesis: *Bus Encoding to Prevent Crosstalk Delay*. I invented “self-shielding codes”, a novel technique for eliminating delay due to digital crosstalk on an on-chip bus. I provided a rigorous theoretical foundation for this class of codes, and derived their fundamental performance limits and characteristics.

Studied analog and digital integrated circuit design, A/D and D/A converter design, computer architecture, logic synthesis, CAD.

BS in Electrical Engineering, **California Institute of Technology (Caltech)**, Pasadena, CA. (1995-1999)

Graduated with **3.9 GPA and “BS with Honors”**.

Studied analog and digital circuit design, programmable logic design, VLSI design, digital signal processing, information theory, data compression, 3D graphics, complex analysis, etc.

Taught data compression, introduction to digital electronics.

Software Engineering

I have released over **forty software titles** over the last decade.

I have completed projects in C, C++, Java, Perl, Lua, JavaScript, OpenLaszlo, MATLAB, VHDL, Verilog, x86 assembly, 6502/65C816 assembly, 68HC11 assembly, ColdFire assembly, PIC/SX assembly, Atmel AVR assembly, Wavefront 1K assembly, and even Applesoft BASIC. I am also familiar with Scheme and Haskell.

I wrote the **DSP sound synthesis engines** for three commercial pro-quality music keyboards: Alesis Ion, Alesis Micron, and Alesis Fusion. Ion and Micron are award-winning analog-modeling synths. Fusion features ultra-high-polyphony sampling, analog modeling, and FM.

I have designed two **embedded operating systems** from scratch, for a Caltech Coke machine and for the Alesis Ion and Micron synthesizers.

I have designed five **language-related things**: bkasm (an algebraic assembler for DSPs), LAAME (a language for robot control), bpublish (a content description language for webpages), Orjasm (a Java bytecode assembler), and Substroke (described above).

Electrical Engineering

I managed the development of the best-selling Alesis Micron synthesizer, and did **all design and engineering**, including product specification, UI, hardware, FPGA, and firmware.

I've also made 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
an accurate freespace rotation sensor, for mechanical engineering research
a device for turning on an air conditioner with a phone call
a full-custom VLSI design: a high-level graphics processor and LED matrix driver
a computerized Coke machine

Music: Life-long piano experience. I can compose, improvise, and sight-read from fakebooks. I have played with a band, and recorded a CD in the studio.

Writing: In particular, creative use of language and wordplay.