Eli Brandt

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Current Research:

Develop *Chronic*, a language for programming with temporal data: computer music programming, scientific computing, or simulation. *Temporal type constructors* make Chronic code unprecedentedly brief and clear, yet capable of arbitrary low-level manipulations.

Education:

Carnegie Mellon University — Pittsburgh, PA.

- Presently enrolled in Computer Science PhD program;
  thesis topic proposed to and accepted by the department, 11/99.

Harvey Mudd College — Claremont, CA.
B.S., Mathematics, 1995.

- Graduated with high honors,
- commendation in mathematics,
- commendation in humanities.

Work Experience:

Intern with IBM Research, Computer Music group (5/99–8/99).
IBM — Yorktown Heights, NY.

- Added parametric polymorphism to the type system of the visual language Sonnet.
- Developed tools and techniques for measuring the timing of MIDI systems.

Intern with IBM Research, Computer Music group (5/98–8/98).
IBM — Yorktown Heights, NY.

- Analyzed MIDI timing over alternative physical layers.
- Provided documentation on the DirectShow architecture to group members.

Intern with Microsoft Research, User Interface group (5/97–8/97).
Microsoft — Redmond, WA.

- Adapted extant software to use current audio and timing APIs.
- Developed research platform for streaming audio synthesis.
- Created parametric synthesis models of rain, sleet, and other environmental sounds.

Software designer (9/94–5/95).
(Unpaid work with Harvey Mudd Clinic program.)
AlliedSignal Automotive — Torrance, CA.

- Developed a system for the graphical design and analysis of turbocharger blades.
- Delivered presentations on this work to AlliedSignal and Harvey Mudd audiences.

Administrator / programmer (6/93–8/93).
University of Massachusetts — Amherst, MA.

- Maintained and expanded a Windows-based network.
- Wrote statistical software in Mathematica.

Mathematical programmer (part-time, 9/89–5/91).
Group for Analysis, Numerics and Graphics
University of Massachusetts / Dept. of Mathematics — Amherst, MA.

- Developed mathematical visualization code under SunOS, Irix.

Publications:

Brandt and Dannenberg, “Time in distributed real-time systems”, Proc. 1999 International Computer Music Conference, International Computer Music Association, (October 1999), pp. 523–526.

Brandt and Dannenberg, “Low-latency music software using off-the-shelf operating systems”, Proc. 1998 International Computer Music Conference, International Computer Music Association, (October 1998), pp. 137–141.

Dannenberg, R. and Brandt, E., “A Flexible Real-Time Software Synthesis System”, Proc. 1996 International Computer Music Conference, International Computer Music Association, (August 1996), pp. 270–273.

Libeskind-Hadas, R. and Brandt, E.,“Origin-Based Fault-Tolerant Routing in the Mesh”, Future Generation Computer Systems, Vol. 11, No. 6, October 1995, pp. 603–615. (Originally published in Proc. 1995 International Symposium on High-Performance Computer Architecture, pp. 102–111.)

References:

Available on request.