





 Philip F. Kromer  
 flip@mrflip.com

 3115 Benelva Dr. · Austin, TX 78705  
 <http://www.mrflip.com/resume/>

 (512) 659 6846  
 (847) 792 4020

## Objective

I seek an entry-level software engineer position that will capitalize on my diverse skills and my initiative in completing large projects. I enjoy programming solid, maintainable code and have significant experience interfacing computer science with scientific and engineering applications.

## Programming

- ✿ **C/C++**: Proficient in C and C++ under Unix and Windows, familiar with Tcl/Tk and MFC.
- ✿ **Perl**: CGI programming; DBI database interface to MySQL; general-purpose data munging.
- ✿ **LabView**: Wide-ranging familiarity with scientific data acquisition and experiment control.
- ✿ **Mathematica, Matlab, Excel** (incl. VBA): Scientific programming and analysis.
- ✿ **HTML** incl. **CSS**: Experience implementing a significant website for the Modern Physics Lab.

## Education

**Graduate School, Department of Physics** · University of Texas, Austin · 1996-99  
**Bachelor of Arts, Computer Science Department** · Cornell University, Ithaca, NY · 1992-96  
Dean's List Fall 94, Spring 95. GRE: Computer Science 830; Verbal 780, Analytical 800, Math 760.

## Employment

**Modern Physics Lab**, Assistant Instructor · UT-Austin · 1998-99  
Taught quantum mechanics lab for physics majors. Supervised and mentored several students pursuing independent projects. Spearheaded redesign (<http://mrflip.com/proposals>) of the course:

- ✿ Made major improvements in equipment and facilities. Designed several new labs.
- ✿ Extensively implemented **data acquisition** in LabView, students may now pursue advanced investigations and to engage in deeper analysis of experiments.
- ✿ Added a **group project** in which students work together on a complex, open-ended experiment.
- ✿ Won **competitive funding** and department support for these improvements.
- ✿ Published a **comprehensive course website** with lab manual, annotated bibliography, advice on writing and research, and resources for instructors. (<http://www.ph.utexas.edu/~phy453>)

**Engineering Physics II Lab**, Teaching Assistant · UT-Austin · 1996-97

**Digital Systems Course**, Undergraduate Teaching Assistant · Cornell CS Department · 1995-96

**Resolution-Independent Video Language**, Research Assistant · Cornell CS Department · 1994-95  
Worked on a team developing a resolution-independent video editing language in C - Tcl/Tk. Responsible for implementing digital effects, including frequency-domain transformations and morphing, and for extending language to include audio effects. Prepared well documented, thoroughly tested code for use by others. CVS/SCCS for code collaboration.

**Heterogeneous Database Construction** · Booz, Allen & Hamilton, Advanced Decision Systems · 1994

**Applications Support Specialist** · Cornell Information Technologies Help Desk · 1993-94

## Volunteer

**Community Technology & Training Center** · 2000 · Taught HTML course for job-skills program.  
**AVID Program, Reagan High School** · 2000 · Tutored math for talented high school students.  
**Texas State Science and Engineering Fair** · 1998, 1999, 2000 · Judge for state science fair.

## Projects

**Hybrid Electric Vehicle Team** · Cornell University · Headed the engine group in a team of forty students who designed, constructed, and raced an energy-efficient passenger car. Redesigned and rebuilt the car's engine. Worked with data acquisition team to record real-time engine data using LabView. Obtained corporate sponsorship for these improvements. (<http://www.hev.cornell.edu>)

**PC-Based Lock-in Analyzer** · Modern Physics Lab · Designed a lock-in analyzer (an extremely sensitive amplifier) in LabView. Uses standard hardware, yet achieves sensitivity several thousand times finer than linear amplifiers, excellent price/performance and significant pedagogical advantages. Worked with an undergraduate to apply the LIA to a superconductivity experiment; entered results in the 1998 AAPT Apparatus Competition. (<http://www.mrflip.com/papers/LIA>)

**Computer-Controlled Nonlinear Pendulum** · Modern Physics Lab · Worked with an undergraduate to develop computer instrumentation and control of a chaotic dynamics experiment. (<http://www.ph.utexas.edu/~phy453/GroupProjects/Chaos/lapdog.pdf>)

**Pipelined RISC CPU** · Researched and designed a pipelined RISC CPU (a then-new technology yielding faster and simpler processors) as an extension project in the Digital Systems course. Worked with the professor to redesign course around RISC architecture/PowerPC-based CPU.