

# Robert Heller

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## Computer Programmer / Linux System Administrator

Highly accomplished technology professional with broad experience in technical support, system administration, and process optimization in educational environment. Proven track record of effective systems operations and support demonstrated through hands-on development, and maintenance of network and software connectivity applications. Able to apply innovative ideas, to solve complex problems and satisfy project needs. Skilled technology expert; able to direct multiple tasks and quickly master new technologies.

### *Areas of Expertise*

- **Systems Implementation & Design**
- **Performance Optimization**
- **Troubleshooting & Problem Resolution**
- **Technical Mentoring**
- **Hardware/Software Purchase Evaluation**

### *Technical Proficiencies*

- **Platforms:** VAX/VMS, SunOS, Ultrix, Irix, Linux (Slackware 3.0, RedHat 4.0 though 9, WBL 3.0 (GPL Clone of RHEL 3.0)), True64.
- **Software:** ENVI, AutoCAD, KBVision, Khoros, various open source/FSF programs (compilers mostly).
- **Languages:** C, C++, Tcl/Tk, LISP, FORTRAN, BASIC, COBOL, Pascal, Java.

### *Professional Experience*

**System Programmer** 9/1980–11/2005, Computer Vision Research Lab, Computer Science Department, University Of Massachusetts, Amherst, MA

Assisted professors and graduate/undergraduate students with computer programs and software questions. Collaborated on implementation of old LISPF3 based Vision System on VAX-11/780 contributed to getting GRASPER compiled and running under CLisp. Worked on implementation of LLVS (Low Level Vision System). Responsible for system administration in UNIX and Linux environments and computer programming in C, C++, Tcl/Tk, Lisp and original Lisp Compiler for CLisp.

- ◇ Helped with implementing the *Old* LISPF3 based Vision System on the VAX-11/780. This project involved working on a simple Lisp system written in (of all languages) FORTRAN. We extended this Lisp system to allow additional FORTRAN modules to be independently compiled and linked into the system and provided for a standardized mechanism to interface these modules with the Lisp system, particularly in terms of image processing. Assisted with the specification of this interface and helped code it at both the FORTRAN and Lisp levels.
- ◇ Helped with implementing the *Less Old* CLisp based Vision System on the VAX-11/780. After using the LISPF3 the Computer Vision Research Lab acquired a version of Lisp written in VAX-11 assembly language and we reimplemented the FORTRAN image processing interface to use this version of Lisp. Started work on

creating a Lisp compiler for this version of Lisp. The Lisp compiler generated VAX-11 assembly language, which could then be compiled and linked into the existing Lisp code base. Dan Corkill, a graduate student in a different group, extended and extensively modified this compiler and also extended and extensively modified the base Lisp system itself, creating what eventually was called 'CLisp'.

- ◇ Helped get GRASPER compiled and running under CLisp. Collaborated with John Lowrance to get the GRASPER system working under CLisp. GRASPER is a Graph Processing Programming Language Extension (Graph as in directed graphs, as a data structure).
- ◇ (1986-1989) Helped implement LLVS (Low Level Vision System). This involved a fresh redesign of the system previously involving Lisp and FORTRAN, now using DEC's VAXLISP (DEC's Common Lisp) system and C (DEC's C) under VAX/VMS. Collaborated with major design and implementation work on this system, including major work on the graphics display interfaces, both at the C and Lisp levels.
- ◇ Conducted major design and implementation of the ISR2 system (Intermediate Symbolic Representation, V2) on TI Explorers (Lisp Machines). This involved extensive design of the low-level data structures used to represent the primitive 'objects', called tokens, used in the ISR system. Since this was a system that ran on Lisp machines, the project was entirely in Lisp, from the low-level data structures to the high-level user interface.

*Education and  
Training*

• **Undergraduate Coursework in Computer Science**

University of Massachusetts, Amherst, MA

- ◇ Programming and System Modules
- ◇ Data Structures
- ◇ Computer Systems (O/S design)
- ◇ Translator Design (Compilers)

• **Professional Development**

- ◇ Show-Plane and Friends User's Manual
- ◇ Using LLVS under VMS
- ◇ Universal LLVS Plane File Format
- ◇ ISR2 User's Guide
- ◇ Home Librarian Reference Manual
- ◇ Role Playing Database Reference Manual V1.1
- ◇ Role Playing Database Reference Manual V2.0
- ◇ Role Playing Database Reference Manual V2.1
- ◇ Space Explorers

*References*

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