GANG CHENG

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GOALS:

System Analyst, Application or System Programmer and Software Engineer, with emphasis on networking or SIMD/MIMD parallel systems.

EMPLOYMENT:

January 1992 - Present :	**System Analyst, Research Assistant**, Northeast Parallel Architectures Center, Syracuse University, Syracuse, NY
August 1991 - January 1992 :	**Teaching Assistant**, School of Computer and Information Science, Syracuse University, Syracuse, NY
March 1991 - August 1991 :	**Programmer Analyst**, Information System Support Laboratory, Virginia Tech, VA.
June 1988 - January 1991 :	**Senior System Analyst**, Chengdu Institute of Computer Applications, Chinese Academy of Sciences.
August 1985 - May 1988 :	**Research and Teaching Assistant**, Computer Science and Engineering Department, Huazhong University of Science and Technology, China.
June 1983 - July 1985 :	**Application Programmer**, Chengdu Institute of Geography, Chinese Academy of Sciences.

EDUCATION:

M.S., *Computer and Information Science*,
Syracuse University, Syracuse, NY, January 1993 (GPA 3.9/4.0).

M.S., *Computer Science and Engineering*,
Huazhong University of Science and Technology, China, May 1988 (GPA 9.7/10.0).

B.S., *Computer Science and Engineering*,
Huazhong University of Science and Technology, China, May 1983 (GPA 9.6/10.0).

PROGRAMMING SKILLS:

Connection Machine 2/5(CMfortran, C, Prism, CMMD, CMX11), DECmpp-12000(MPfortran, MPL, MPPE), nCUBE2(NDB), TCP/IP, Express, PVM.*

SUNstation, DECstation, IBM RS6000(UNIX, ULTRIX, AIX), VAX-11(VMS), IBM-PC(DOS), Macintosh.

C, **C++**, *Fortran(Fortran77, Fortran90), Lisp, Prolog, Pascal, Cobol, Basic, Algol60, 8086/8088* and *8031/8051 Assembly, VHDL.*

X Window(Xlib, X Toolkit, OSF/Motif Toolkit), *AVS, SQL, dBASE-IV/Clipper, MS-Window, HALO, many other software packages on UNIX-based workstations.*

HONORS:

1. Graduate Scholarship, Graduate School, Syracuse University (1991-92).
2. Junior Visiting Research Fellow, Chinese Academy of Sciences (1989-90).
3. Member of Chinese Computer Federation.

MAJOR PROJECTS:

1. **Financial Modeling on Parallel Systems**. A set of stock option pricing models are implemented in Fortran90 and ported to massively parallel systems such as CM-2 and CM-5(in CMFortran), DECmpp-12000(in MPFortran and MPL), nCUBE2(in Fortran77+Express) and networked workstations(in Fortran77+Express).

2. **An Interactive Visualization Environment on a Distributed High Performance System**. Written in C and AVS modules and using financial modeling as an example, application's computing modules running on CM2/5, DECmpp-12000, SUN, DEC, IBM workstations are coupled, over a LAN(Ethernet), with network-based GUI running on a graphical workstation IBM RS6000 and managed under X-Window. This is a highly portable UNIX-based system.

3. **A Vector-Based Spatial Database Management and Map Display System**. In Fortran77, Clipper and MS-Window and as a subsystem of the VirGIS (Virginia Geographic Information System) Project at Virginia Tech, this PC-based system allows the user to manage and generate high quality graphics of DLG maps in various ways.

4. **"LISP+PROLOG" Interpreter-Compiler**. In C, the host of this system is a Lisp interpreter into which a Prolog compiler(as a knowledge base processor), an editor and a debugger are integrated. In this AI language, a user can program in either independent or mixed paradigms of Lisp and Prolog.

5. **A Highway Toll-Collecting System**. In Intel 8031/8051 assembly and as a firmware in MCS-51(a microchip processor), it handles real-time processing of input signals from magnetic card reader/encoder which are data entry equipment at highway toll-station.

6. **A Debris Flow Database System**. In dBASE-IV and C, this system was built for the management of debris flow disasters occurred in Southwest China since 1960's.

7. **Employee Management System**. In C/UNIX, this database management system provides the employer with usual management and query services for personnel administration and finance transaction.

SELECTED PUBLICATIONS:

1. *A Large Scale Comparison of Option Pricing Models with Historical Market Data,* in *Proc. of the 4th Symposium on the Frontiers of Massively Parallel Computation,* October, 1992, McLean, VA, pp. 420-426 (with K. Mills, M. Vinson).

2. *An Interactive Visualization Environment for Financial Modeling on Heterogeneous Computing Systems,* to appear in *Proc. of the 6th SIAM Conference on Parallel Processing for Scientific Computing,* March 1993, Norfolk, VA (with K. Mills, G. Fox).

3. *Software Issues and Performance of a Stock Option Pricing Model on the Connection Machine-2 and DECmpp-12000,* to appear in *Proc. of the 5th Australian Supercomputing Conference,* December, 1992 (with K. Mills, M. Vinson, S. Ranka, G. Fox).

4. *A Functional + Logic Programming Language in Interpretation-Compilation Implementation, Lisp And Symbolic Computation: An International Journal,* Vol. 5, No. 3, 1992, pp. 133-156 (with Y. Zhang).

5. *The Implementation of An AI Language Unifying Functional and Logic Paradigms, M.S. Thesis,* Computer Science and Engineering Department, Huazhong University of Science and Technology, China, 1988.

6. *A Computer-Based Information System on Moving Elements of Debris Flow,* in *Proc. of the 1st Japan-China Symposium on Landslides and Debris Flows,* 1989, Tokyo, Japan (with Z. Kang).

7. *A Province-Wide Natural Disaster Precaution System: An Application of Geographic Information System to Natural Disaster Reduction,* in *Proc. of the 2nd International Workshop on GIS,* Beijing, 1990 (with X. Huang).

8. *A Highway Toll-Collecting System with Mag-Card Reader, Computer Applications,* 1990 (with S. Huang).

REFERENCES: Available Upon Request.