

ARVIND GOPU

Email: agopu [at] indiana.edu Web: <http://peart.ucs.indiana.edu/>

Education:

- **Indiana University, Bloomington, IN** **Aug 2004**
 - Master of Science in Computer Science GPA: 3.68/4.0
 - Master of Science in Bioinformatics GPA: 3.92/4.0
- **University of Madras, Chennai, India** **May 2001**
 - Bachelor of Engineering in Electronics and Communication GPA: 3.9/4.0

Work Experience:

- **University Information Technology Services, Indiana University, Bloomington, IN** **Oct 2004 – Present**
 - **High Performance Computing (HPC) Software Analyst:** Provide computing support to HPC users at Indiana University and on the TeraGrid – use of software libraries, porting, debugging & compiling code, batch job submission, programming support & training, testing and analyzing new HPC hardware/software resources.
- **University Information Technology Services, Indiana University, Bloomington, IN** **Jan 2004 – Oct 2004**
 - **TeraGrid Implementation Specialist:** Investigated requirements for Indiana University's participation in TeraGrid project, implemented TG account management sub-system, built local certificate authority for testing, issued local host/user certificates, designed reporters for INCA test harness.
- **School of Informatics, Indiana University, Bloomington, IN** **May 2003 – May 2004**
 - **Research Assistant** for Dr. Sun Kim: Designed & implemented algorithms using Perl/C/C++/bioinformatics tools to enhance sequence clustering program, organized research group meetings, presented papers.
- **Department of Computer Science, Indiana University, Bloomington, IN** **Aug 2001 – May 2003**
 - **Associate Instructor** for 'Introduction to Computers' course and 'Network Technologies & Administration' course. Involved teaching around 30 undergraduate/graduate students in lab and grading exams/projects.

Selected Projects:

- **TeraGrid Advanced Support:** Have been assisting users from various disciplines (Computer Science, Geology, Astronomy, Physics and Geo-Physics) to run code on various TeraGrid systems. Tasks include porting code, installing libraries, reading documentation, working with system administrators to fix problems or figuring out system specific details. **Nov 2005 – Present**
- **TeraGrid Knowledge Base:** Active participant of TeraGrid Knowledge Base group. Initiated several discussions from UITS-RC side to move project forward; have been contributing content to KB articles. **Apr 2005 – Present**
- **High Performance Computing @ IU Workshop:** Involved in redesign of workshop contents, planning and organization of High Performance Computing group's workshops on using supercomputers (Big Red, AVIDD) and parallel programming using MPI. Have lead several workshops so far; Participants include faculty, staff and graduate students from various disciplines of Indiana University (Bloomington and Indianapolis campuses). **Dec 2004 – Present**
- **Optimizing Cross Validation of Proteins Neural Network Code:** Assisted research group in IUPUI School of Informatics with porting and optimizing neural network code on Big Red cluster. **Nov 2006 – Jan 2007**
- **Fact-Checker - UITS-RC Grant Proposal Team:** Have been participating in the writing of UITS-RC's NSF grant proposals as a fact checker. **Jan 2006 – Nov 2006**
- **Hydra Condor Project:** Joined existing project team as core member. Involved in bringing Hydra cluster onto the TeraGrid with access via dual Kerberos authentication and Apache virtual hosts, making presentations about the project at various forums, experimenting with new virtualization/application software, building test Condor pool replicating real Hydra Condor cluster.

Feb 2005 – June 2006

- **Image Similarity Computation (Serial & Parallel):** Developed and optimized Java code that computed pair wise image similarity scores for large number of images; Designed and developed parallel code (MPI/C) for the same. Implementation was on Solaris & Linux based environments. Part of consulting work for graduate student in School of Library and Information Sciences (SLIS), Indiana University, Bloomington, IN. **Oct 2004 – Nov 2004**
- **TeraGrid Account Management Subsystem Implementation:** Involved in installing TeraGrid Account Management subsystem, designing and developing software using Perl, PostGreSQL and Unix Shell Scripting to bridge local and TeraGrid-central account management systems. **Jan 2004 – Oct 2004**
- **Sequence Cluster Merging Framework:** Master's thesis project, involved algorithm design and implementation using Perl, C, LEDA, Matlab, Fasta34, Clustalw, BAG clustering program and statistical techniques. Joint work with Prof. Sun Kim, School of Informatics, Indiana University, Bloomington, IN. **June 2003 – June 2004**
- **Peak Finding in 3D Liquid Crystallography data:** Research project, involved algorithm design and implementation in C++, LEDA. Joint work with Prof. Sun Kim, School of Informatics & Prof. David Clemmer, Chemistry department, Indiana University, Bloomington, IN. **May 2003 – Aug 2003**
- **Project Supervisor & Quality Manager:** Was supervisor and quality manager of four member project (Microsoft Visual Basic/Access) team as part of Software Engineering Management course. **Aug 2002 – May 2003**
- **Visualizing Query Structure:** Research project involved programming in Java, Perl. Joint work with Prof. Dennis Groth, School of Informatics, Indiana University, Bloomington, IN. **Aug 2002 – Dec 2002**
- **Grid Registration Infrastructure for Physics Experiments (GRIPE):** Software development project involved requirements gathering, software design and implementation using JSP, Oracle. Part of four member team towards requirement of software engineering course. **Aug 2001 – May 2002**
- **Mobile Address Book:** Software development project involved software design and implementation using Java Servlet, WML, and Microsoft Access. Part of three member project team. **June 2000 – May 2001**

Skills:

- **Programming:** C, C++, MPI, Java, JSP, Java Servlet, Perl, CGI, PHP, JavaScript, Unix shell scripting
- **Platforms:** Linux, AIX, Windows XP/2000/NT, Solaris
- **Tools:** Vampir Profiler, TotalView Debugger, Emacs, RCS, Subversion, JBuilder, Eclipse, CVS
- **Services:** Apache, Iptables, Kerberos, Postfix, Tomcat, GridSphere, Softenv, Globus, MyProxy, SimpleCA
- **DBMS:** Oracle, PostGreSQL, MySQL, Microsoft Access

Publications:

- **Survey of TeraGrid Job Distribution: Toward Specialized Serial Machines as TeraGrid Resources** A. Gopu, R. Repasky, S. McCaulay; TeraGrid'07 conference, Madison, WI **June 2007**
- **Three-Dimensional Geofluid Simulation using Parallel geofe on TeraGrid Resources** P. Wang, D. Cohen, M. Person, A. Gopu, C. Gable; TeraGrid'07 conference, Madison, WI **June 2007**

Technical Reports:

- **Cluster Utility: A New Metric to Guide Sequence Clustering** (Technical Report) Kim S. and Gopu A., School of Informatics, Indiana University, Bloomington, IN. **June 2004**

Presentations:

- **Hydra, Campus Grids Workshop:** Presented Hydra (Condor cluster) project at:
 - NSF TeraGrid program officer's site visit, Indianapolis, IN. **Feb 2006**
 - Super Computing (SC|05) conference, Seattle, WA. **Nov 2005**
 - Campus Grids workshop organized prior to the Global Grid Forum (GGF 15) conference, Boston, MA. **Oct 2005**

- **SeqClusMerge, Masters Thesis Presentation:** Presented SeqClusMerge, a Biological Sequence Cluster Merging framework, as part of my Bioinformatics Masters degree in the School of Informatics, Indiana University. **June 2004**

Accomplishments:

- Awarded *EdCert* Advanced Unix System Administrator certificate by Indiana University's Unix Systems Support Group **Mar 2005**
- Selected as minority intern by University Information Technology Services group at Indiana University to work on TeraGrid project. **Jan 2004**
- Awarded research/teaching assistantships with 100% fee remission by Indiana University School of Informatics and Department of Computer Science. **May 2003/Aug 2001**
- Ranked first in undergraduate class of 70 students at Dr. MGR engineering college accredited by University of Madras. **May 2001**
- Was in top 1% of scorers in Graduate Record Examination (GRE), scored 2390/2400, 99 percentile. **Aug 2000**