# Manohar Vanga

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## EDUCATION

- **Jawaharlal Nehru Technological University** 3rd year of B.Tech. in Computer Science; Percentage: 65%
- **Vasant Valley School** Schooling, 1992 - 2006; CBSE Syllabus, 12th Standard: 84%, 10th Standard: 86%

## UNDERGRADUATE-LEVEL COURSEWORK

- **Computer Science Courses** Data Structures, Advanced Data Structures, Digital Logic Design and Computer Organization, Introduction to Algorithmic Design and Analysis, Microprocessors and Interfacing, Object Oriented Analysis and Design, Operating Systems, Computer Networks, Software Engineering Techniques, Compiler Design, Computer Graphics, UNIX Programming, Information Security, Artificial Neural Networks, Software Testing Methodologies, Database Management Systems
- **Mathematics Courses** Numerical Methods for Computer Science, Mathematics-1, Probability and Statistics, Discrete Mathematical Structures, Formal Languages and Automata Theory

## RESEARCH EXPERIENCE

- I am a self-taught LISP and Prolog programmer. I am in the process of rewriting Joseph Weizenbaum's ELIZA program in LISP and have also implemented a minimalistic Scheme interpreter in LISP.
- I am currently writing a paper on "Automatic Musical Notation Generation from Guitar Videos". It is meant as an exercise to improve my research skills and involves techniques of image processing and machine vision.

## RESEARCH INTERESTS

My interests are in artificial intelligence, especially natural language processing, machine learning, and machine vision. I am a highly motivated student and am willing to work with all the knowledge, skill and energy that I possess in order to advance my knowledge and learning in the above areas. I am a quick learner and I can grasp new concepts and techniques easily.

## SKILLS

- **Programming Languages** Fluent with C/C++/JAVA. Also familiar with Shell Scripting, Perl, Python, Ruby, LISP, Scheme, Prolog
- **Operating Systems** Expert Linux/UNIX user, Experienced Windows user, Considerable Linux administration experience
- **Other Computer Skills** CVS/SVN/Git Version Control Systems, LaTeX, Word Processing
- **Languages Spoken** English (*Fluent*), Hindi (*Fluent*), Telugu (*Fluent*)
- **Miscellaneous** Guitar player for 5 years, Learned carnatic classical music for 4 years

## INDIVIDUAL PROJECTS

*Further details available at* `http://www.manoharvanga.com/projects.html`

- **MiniOS** MiniOS is a miniature operating system created for educational purposes. It consists of a boot loader, a kernel that sets up the CPU, basic screen functions, a keyboard handler and a simple memory manager.
- **SubC** SubC is a compiler for a C-like language that was implemented from scratch using Java. It generates unoptimized assembly code that can be readily compiled by NASM (Netwide Assembler)
- **GraphicX** GraphicX is a graphics library showcasing the various algorithms used in 2D computer graphics.
- **Turbo4Lin** Turbo4Lin is a library that enables the easy porting of Turbo C graphics applications from DOS to a Linux environment.

- **8080-Emu** 8080-Emu is an emulator for the Intel 8080 microprocessor, inspired by various virtualization environments such as QEMU, VirtualBox and VMWare.
- **Tiny (Compiler and Interpreter)** Tiny is a small expression-based language whose statements consist of assignment, integer input and screen output statements. I have implemented a compiler and an interpreter for Tiny in Java.
- **TrafficAnalyst** : TrafficAnalyst is a project that aims to analyze road traffic footage and collect various statistics about them (For example, average number of vehicles sighted per day). It is currently still in the prototyping stages and involves image processing and machine vision techniques.

### COLLABORATIVE AND OPEN SOURCE PROJECTS

- **Twincling Scano** Scano is an open source Source Code Annotation software that I am developing in collaboration with the Twincling Technology Foundation, Hyderabad, India.
- **MiniServ** MiniServ is an open source, lightweight web server that I authored. It is written entirely in C and can serve basic HTML files. Its original purpose was to serve various documentation files on the college network. It has a tiny memory footprint of 14k.
- **World of Midgard** World of Midgard is a text-based MUD (Multi-User Dungeon) game that I developed (and abandoned due to time considerations). It consists of a server that can interpret and execute game commands sent by a client.

### MISCELLANEOUS ACTIVITIES

- **Open Source Community Lead** I am a community lead for the Twincling Technology Foundation, Hyderabad. As a community lead I help community members adopt open source solutions.
- **Linux User Group** I am an active member of the Twincling Linux User Group (now the Twincling Technology Foundation), Hyderabad. I have attended various technical talks by community members for over a year.
- **Open Source Summit 2008** I was one of the team leaders that helped organize the Open Source Summit 2008 involving technical talks by various representatives from open source companies and products such as BeleniX, Git, Hadoop, Gentoo, OpenSUSE, C-DAC and Intel.

- Last updated on 8th March, 2009