

N V SUBBA RAO

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EDUCATIONAL QUALIFICATIONS

Year	Degree	Institution (Board)	CGPA/%
2010 – 2015*	B.Tech – M.Tech (Dual) (Computer Science & Engineering)	Indian Institute of Technology Kanpur	9.4/10.0
2010	XII	Narayana Jr College, Hyderabad (BIE, A.P.)	96.8
2006	X	Kendriya Vidyalaya AFS Begumpet, Hyderabad (C.B.S.E.)	93

ACADEMIC ACHIEVEMENTS

- Awarded the Certificate of Merit for Academic Excellence for the academic year 2010-11 at IIT Kanpur.
- Received Dr.M.Anantaswamy and Mrs.Vijayalakshmi Rau Donors' Scholarship in the academic year 2010-11 at IIT Kanpur for academic excellence.
- Awarded Kishore Vaigyanik Protsahan Yojana (KVPY) Fellowship Award – 2009 based on Aptitude Test and Interview conducted by Indian Institute of Science Bangalore.
- Placed amongst the top 0.06% in IIT-JEE 2010 with an All India Rank of 302 (amongst 4,55,500 students).
- Secured an All India Rank of 166 in All India Engineering Entrance Examination (AIEEE) 2010 (10,60,000 students appeared) conducted by Central Board of Secondary Education.
- Placed in Statewise Top 1% in Andhra Pradesh in National Standard Examination in Chemistry in classXII.

INTERNSHIPS

AMPLE (Adaptive System for Personalized Learning)

May 2013-July 2013

Summer Internship under Dr.Sumit Negi, IBM Research India (Extreme Blue Internship) (Group of 3)

- Implemented a learning system where learning content is categorized according to 'comprehension burden' of the content.
- Personalized learning content is recommended to the learners based on their skill profile.
- Integrated the system into an open-source Learning Management System called Moodle.

ACADEMIC PROJECTS

Movie Ratings Prediction

Sep 2013-Nov 2013

Course project in CS771: Machine Learning Tools, Techniques and Applications under Dr. Harish Karnick, IIT Kanpur (Group of 4)

- Implemented an algorithm to predict the movie ratings for existing and new users based on a novel idea of combining ratings correlation and demographic correlation between users in a collaborative filtering based approach.
- Matlab and Weka library in Java were used in implementation alongwith 100k dataset of Movie Lens project.
- Results showed an improvement in accuracy slightly compared to the existing techniques for movie ratings prediction.

Laboratory Data Management System

Aug 2013-Nov 2013

Course project CS455: Introduction to Software Engineering under Dr.T.V.Prabhakar, IIT Kanpur(Group of 2)

- Implemented a web application, which would allow scientists to document research, experiments and procedures performed in laboratories, using HTML5 and CSS.
- Bootstrap & JQuery were used for the front end, and PHP and MySQL were used for the back end supported by an Apache Server (XAMPP).
- Features include Content Creator(with a rich text editor) for adding/editing reports with voice enabled input, interface for managing the reports and downloading the reports as PDF files.

Compiler for Eiffel Programming Language

Jan 2013-Apr 2013

Course project in CS335: Compiler Design under Dr.Sanjeev K Aggarwal, IIT Kanpur (Group of 3)

- Implemented a compiler for a subset of Eiffel programming language in C++ using Lex and Yacc.
- Implemented features like arithmetic and logical operations (inequalities) for the basic data types namely Integer, Boolean, Character and Real.
- Constructs like conditionals, loops, switch cases and functions (including recursion) as well as object-oriented features including classes, objects and inheritance (multiple & multi-level) also implemented.

Web based Movie Database

Mar 2013-Apr 2013

Course project in CS315: Principles of Database Systems under Dr.Harish Karnick, IIT Kanpur

- Developed a web based movie database application using PHP, Javascript, HTML and MySQL.
- Integrated functionalities like separate user and administrator login, title,actor,director based search, top movies, user ratings and comments.

Web Browser

Mar 2013-Apr 2013

Course project in CS653: Functional Programming under Dr.Piyush P Kurur, IIT Kanpur (Group of 6)

- Implemented a full-fledged web browser in Haskell using WebKit capable of displaying webpages with text, images and scripts.
- Added support for proxy authentication, runtime plugins, cookie handling and downloading binary files.

Implementation of functionalities in a bare-bones Operating System (Pintos) Aug 2012-Nov 2012

Course project in CS330: Operating Systems under Dr.Subhajit Roy, IIT Kanpur (Group of 3)

- Implemented a subset of POSIX interface to message queues for interprocess communication through message passing and pthreads, an API for managing threads in PINTOS.
- Also implemented system calls (fork and exec), virtual memory, paging, handling of page faults for memory replacement and shared memory in PINTOS.
- Added features to the filesystem to make it hierarchical, support variable sized files and implemented a buffer cache for it.

Interpreter for Declarative Sequential Model Aug 2012-Sep 2012

Course project in CS350: Principles of Programming Languages under Dr.Satyadev Nandakumar, IIT Kanpur (Group of 2)

- Implemented an interpreter for Oz source code given in easy-to-parse Abstract Syntax Tree format.
- Single Assignment Store was implemented and output was the sequence of execution states.

P2P File Sharing System Oct 2012-Nov 2012

Course project in CS425: Computer Networks under Dr.Dheeraj Sanghi , IIT Kanpur (Group of 4)

- Implemented a client-server based file sharing system similar to Napster in C using socket programming.
- Features include viewing all the shared files and downloading the files shared by a peer.

An Online Programming Practicing Tool May 2012-July 2012

Summer Project under Dr.Subhajit Roy, IIT Kanpur

- Developed an application using PHP which can be used as a tool for practicing programming exercises.
- Useful for conducting quizzes or exams and also for practicing purpose in a programming course.

Learning Heuristic Functions for 24-Puzzle Jan 2012-Apr 2012

Course Project in CS365: Artificial Intelligence under Dr.Amitabha Mukerjee, IIT Kanpur (Group of 2)

- Implemented Interleaving and Random Walk algorithms to solve 24 puzzle by learning better heuristic functions using machine learning as devised by *Shahab Jabbari Arfaee*.
- Iteratively Deepening A*(IDA*) was used as the graph search algorithm and Artificial Neural Network was used as the computational model.
- Results showed that the proposed approach outperformed previous optimal methods in solving time with reasonable suboptimality in the solutions.

TECHNICAL SKILLS

- **Operating Systems:** Linux, Windows
 - **Programming Languages:** C, C++, Java, Python, Haskell, Oz, Bash Scripting, SQL, Assembly Language (MIPS Architecture)
 - **Web:** HTML, PHP, Javascript, CSS, MySQL, JQuery
 - **Tools:** Latex, Matlab, GNU Octave, Lex, Yacc, Make, Sed, Awk
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RELEVANT COURSES

CS771	Machine Learning Tools & Techniques	CS648	Randomized Algorithms
CS653	Functional Programming	CS455	Introduction to Software Engineering
CS345	Algorithms II	CS335	Compiler Design
CS315	Principles of Database Systems	CS425	Computer Networks
CS350	Principles of Programming Languages	CS340	Theory of Computation
CS330	Operating Systems	CS302	Introduction to Mathematical Logic
CS365	Artificial Intelligence	CS201	Discrete Mathematics
CS355	Programming Tools and Techniques	CS220	Introduction to Computer Organisation
ESO211	Data Structures and Algorithms	ESC101	Fundamentals of Computing
IME636	Introduction to Game Theory	MTH203	Differential Equations
PHI455	Philosophical Logic	MTH102	Linear Algebra and Complex Analysis
ECO101	Introduction to Economics	MTH101	Multivariable Calculus
CS698D	Special Topics in Data Compression [#]	MTH511	Statistical Simulation & Data Analysis [#]
CS698Y	Topics in Object Oriented Language Implementation [#]	CS628	Computer Systems Security [#]

[#] To be completed by April 2014

POSITIONS OF RESPONSIBILITY

Academic Mentor

Counselling Service, UG Wing, IIT Kanpur 2011-12

- Mentored students of the junior batch facing difficulty in LIF101: Introduction to Biology Course.
- Evening classes were conducted to help academically weak students by tutoring and peer guidance.

Senior Security Officer

Security Cell, Antaragni '10 and '11

- Worked as a Security Officer in Antaragni 2010 and 2011, the annual cultural festival of IIT Kanpur.
- As a part of the Security Cell, ensured smooth conduction of events like Professional Shows.

EXTRA CURRICULAR ACTIVITIES

- Participated in Certified Information Security Specialist Workshop conducted by CyberCure Solutions at IIT Kanpur during September 2011.
 - Successfully qualified for Tiritiya Sopan in The Bharat Scouts and Guides in September 2005.
 - I am passionate about football and am an ardent fan of FC Barcelona, and also enjoy watching movies.
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