Midhul Varma Vuppalapati

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Education

- **Indian Institute of Technology (IIT) Guwahati** — **Guwahati**
  B.Tech Computer Science and Engineering, CGPA: 9.12 — *2013–Present*
  Minor in Engineering Physics
- **Vidyadham Junior College** — **Hyderabad**
  Senior Secondary, Percentage: 96.7% — *2011–2013*
  Mathematics, Physics & Chemistry
- **CHIREC Public School** — **Hyderabad**
  Secondary, CGPA: 9.6 — *2011*

Experience

- **Microsoft India R&D Pvt Ltd** — **Hyderabad**
  Software Development Engineering (SDE) Internship — *May 2016 - July 2016*
  Worked in the Search Technology Center India (STCI) and developed technology for Automatic Verification of User submitted feedback for Bing Local Search Entities using information available on business websites and aggregators.

Publications

Midhul Vuppalapati, Hema Kumar Yarnagula, and Venkatesh Tamarapalli. WebRTC-based peer assisted framework for HTTP live streaming. In *COMSNETS 2017 - Poster Track (COMSNETS 2017 Poster Track)*, Bangalore, India, January 2017.

Survey Papers

- **Database Recovery Mechanisms: A Survey**
  Midhul Varma & Preetham Kamidi — *April 2016*
  A survey of research literature on Crash Recovery Techniques & Algorithms in the context of both traditional on-disk and modern Main Memory/Distributed Database Systems.
- **NAT Traversal**
  Midhul Varma — *March 2016*
  A survey of different types of Network Address Translation (NAT) mechanisms used by network middle-boxes and techniques/protocols which can be used to traverse them in order to establish peer to peer connections.

Academic Projects

- **WebRTC based Peer Assisted Video Streaming**
  Dr. T Venkatesh — *August 2016–Present*
  Developed a purely browser based and plugin free mechanism for video streaming which can make use of the uplink bandwidth of peers who are simultaneously watching a stream to reduce load on the streaming server. Technologies used were WebRTC, WebSockets & Node.js. Exploring the issues of Rate Adaptation and Quality of Experience (QoE) in this system.

- **Document Search Engine for Wikipedia pages**
  Dr. S. Ranbir Singh *October 2016*
  Indexed a subset of Wikipedia's English-language pages and implemented a search engine which takes whole documents as queries and returns relevant/similar documents in the set as results. Vector space representation enhanced with a Word2Vec NLP model was used for computing document similarity. REST API and corresponding web front end were also developed.
- **Compiler for a C Like Programming Language**
  Dr. Arnab Sarkar *April 2016*
  Designed a small statically typed programming language with syntax similar to C and implemented a compiler capable of generating MIPS & x86_64 assembly code, in C++ using Flex and Bison.
- **PintOS Projects**
  Dr. G Sajith *October 2015*
  Completed Stanford University's PintOS Projects 1 & 2, which involved implementing/enhancing parts of the PintOS kernel including scheduling algorithms and core system call functionality.
- **Vehicle Management System**
  Dr. P.K. Das *May 2015*
  Worked in a team of 20 students to build a vehicle management system which provides various facilities to vehicle owners & security personnel through web and android applications. Designed and implemented a RESTful API on the server side using Django REST framework, and supporting client-side library for the Android platform.
- **4-bit Multi-cycle Processor**
  Dr. Jatindra Kr. Deka *April 2015*
  Designed a 4-bit multi-cycle processor architecture with a custom instruction set and built a working processor based on it from scratch using electronic components assembled on a set of breadboards.

Technical Skills

- **Programming languages:** C, C++, Python, Javascript (Node.js), C#, SWI-Prolog, Java *
- **Web technologies:** HTML, CSS, Express, Django *
- **Database systems:** MySQL, LevelDB
- **Networking/Simulation:** Wireshark, NS3, Mininet, OMNET++*
- **Data Science/Machine Learning:** Pandas, NumPy, Keras (Theano), Azure ML Studio
- **Miscellaneous:** Android *, LaTeX, IDA Pro *

* Elementary proficiency

Achievements

- Ranked 6th in Microsoft's Build the Shield Capture the Flag (CTF) 2016 Qualifier contest.
- Ranked 53rd in ACM ICPC 2016 Chennai region online contest out of 1,100 teams all over India.
- Ranked 124th in ACM ICPC 2016 Amritapuri region online contest out of 1,500 teams all over India, and competed with the top 300 teams in the onsite contest.
- Qualified for the final International round of the International Autonomous Robotics Competition (iARC), held at Techkriti'14, IIT Kanpur, among 2 teams from India
- Shortlisted for the Aditya Birla Group Scholarship 2013 among 27 students from all over India
- Shortlisted for the prestigious KVPY Fellowship 2012, Department of Science & Technology, Govt. of India

- Secured All India Rank 821 in JEE (Joint Entrance Examination) Advanced 2013 out of 150,000 candidates
- Secured All India Rank 251 in JEE Mains 2013 out of around 1.4 million candidates
- Placed in National top 1% out of 40,721 candidates in the National Standard Examination in Physics (NSEP)
- Qualified state level Pre Regional Mathematics Olympiad 2012

Extracurricular Activities

- Part of Core Team which organized Technothlon 2013, International School Championship, an initiative by students of IIT Guwahati. Responsibilities included design of question paper and leading a group of city representatives.
- Conceptualized and prototyped a mobile phone based technology which enables better interactivity in large classrooms. Presented a poster and demo of the prototype in TechEvince 1.0, IIT Guwahati during first year of college
- Participated and Won various robotics, electronics and programming competitions in Kriti 2014, 2015 & 2016 (Annual Inter-hostel technical competition in IIT Guwahati)
- Successfully built an application in Microsoft Code.Fun.Do 2015 Hackathon using Azure Cloud Services & Bing maps API