#613, Godavari Block, NGV,
Bangalore, Karnataka, India

VINAY BHAT
THIRD YEAR UNDERGRAD

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EDUCATION

Surathkal, Karnataka   **National Institute of Technology, Karnataka**   **August 2014 – May 2018**

- **B. Tech**, Information Technology
- **Undergraduate Coursework**: Data Structures and Algorithms, Operating Systems, Compilers, PL Theory, Networks, Distributed Systems, Semantic Web, Parallel Computing, etc.
- **Autodidact with a passion for learning**: Learnt artificial intelligence, functional programming and web development all through online resources and books.

WORK EXPERIENCE

Bangalore, Karnataka   **Siemens, R&D**   **May 2016 – July 2016**

- **Research Intern,** *Artificial Intelligence, Natural Language Processing, Computational Semantics*
- Built Knowledge Based System Builder, an AI framework for creating KBS apps.
- Built the core NLP engine, for translating natural language to first-order logic using **NLTK** in **Python**.
- Built the logical reasoning module to reason through first-order logic statements using **Haskell**.
- Designed and implemented a **REST API** for the core server, which served the API endpoints for all AI agents using **Flask** in Python.
- Built the web front-end generator for the applications using **JavaScript** and Python.

Mumbai, Maharashtra   **Indian Institute of Technology, Bombay**   **December 2015**

- **Open Source Intern,** *Image Processing, Systems Programming*
- Worked on IIT Bombay's fork of Scilab, an internationally used open source equivalent to Matlab.
- Wrote code for the Image processing toolbox, designing and implementing algorithms for morphological image analysis and processing.
- Code written was open sourced, under Free and Open Source Software for Education program.
- Technology stack: **C++, OpenCV, Scilab, Git**

Bangalore, Karnataka   **Make A Difference**   **May 2015 – July 2015**

- **Web Development Intern**
- Wrote code for India's first online and offline (internal) fundraising platform, streamlining transactions from all across 23 cities of MAD (an NGO)'s operation.
- Built the server responding to SMS requests to develop offline functionality.
- Technology stack: **Ruby, Ruby on Rails, MySQL, AngularJS, jQuery, Git**

TECHNICAL PROJECTS

- **Distributed Access Shell**. Dash, a new innovative shell, allows inter-host, inter-process communication by combining the two fundamental UNIX abstractions: sockets and pipes, allowing distributed command execution and redirection. Uses C TCP sockets, various other Unix IPC features and a custom designed protocol. **C, Makefile**
- **xv6p OS**. xv6p implements the whole suite of features possible using x86 paging hardware to MIT's xv6 Operating System, including demand paging from disk, lazy page allocation, memory mapping of files into private memory and copy-on-write fork. **C, QEMU**
- **FFT Parallelization**. Designed and implemented an effective way to parallelize the Cooley-Tukey FFT algorithm in OpenCL, leveraging GPU computation. **C, OpenCL, Pthreads**
- **TaskBox Sync**. A personal-assistant like task manager, logger and web crawler. Generates periodic automatic reports. Syncs with Google Keep. **Haskell, Ruby, bash**.

- **AI Scheduler**. Web application which takes n tasks with their deadlines and amount of time required and auto schedules them, distributing them evenly using AI algorithms across all dates, with drag and drop support. A better version of Google Calendar. **Ruby on Rails, JavaScript, MySQL**
- **Competitive Exams Question Generator**. Web application which generates a random question within the bounds set by user. User can filter based on Exam, Subject, Subtopics, Difficulty, etc. **Ruby, Ruby on Rails**, JS, MySQL
- **Cricket Game Engine**. A cricket game engine which simulates a game of cricket and provides a rich API for probabilistic analysis using user data on players' statistics. **Ruby**.

ACHIEVEMENTS

- **Headed an online course for teaching Erlang, Functional Programming and Concurrent Programming**
- **Executive Member, IEEE, NITK chapter**
- **Publicity Coordinator and Core Member, Web Club**
- **HackerRank Campus Ambassador (Junior)**
- **Co-founded a start-up:** Started-up a service with two others, which generates random questions for IITJEE (mains) prep help. Based on the Competitive Exams Question Generator project.
- **Scored in 99.6th percentile:** Scored in the 99.6th percentile in the entrance test for NITs (premier Indian engineering universities), written by 1.36 million Indians.

Languages, Technologies and Interests

- *General Scripting*: Ruby, bash, Python
- *Systems Programming*: C, C++, Java, Shell Scripting, SQL, OpenCV, Scilab, Git
- *Artificial Intelligence*: NLTK, Python
- *Functional Programming*: Haskell, Common Lisp, Erlang
- *Web Development*: Ruby on Rails, Flask, Sinatra, jQuery, JavaScript, HTML, CSS