



# Vishal Anand

Bachelor of Technology – CSE

Department of Computer Science and Engineering

Indian Institute of Technology Guwahati

+91 7896377541

anand.vishal2994@gmail.com

www.linkedin.com/in/anandvishal94

www.vishalanand.net

DEGREE	INSTITUTE	CGPA/%	YEARS
Bachelor of Technology	Indian Institute of Technology Guwahati	8.10/10.00	2011 – 2015
Senior School Certificate Exam (CBSE)	Delhi Public School, Bokaro Steel City	92.2	2011
Secondary School Examination (ICSE)	Saint Lawrence School Tentoloi	93.71	2009

## EXPERIENCES

Software Engineer, **Visa Inc.**

Aug 3, '15 – Current

Part of the Risk Solutions team, working on risk aspects and fraud detection in the Visa payment machinery.

Google Summer of Code 2015, **Google**

Apr 25, '15 – Aug 31, '15

Mentor : Rob Emanuele

Kriging interpolation in core raster library, building the Kriging models (Simple, Ordinary, Universal, Geostatistical). Distributed version to convert large collection of points in space into rasters, using Spark enabled with GeoTrellis.

Summer Strategies Analyst, **Goldman Sachs**

May 19, '14 – Jul 25, '14

Mentors : Rochak Lamba, Lemonidis Panayiotis, Shunil Ohrie

In the **Securities Division**, worked with the *London Equity One Delta* team on *Algorithmic Trading Platform* and extended the ETF's pricing machinery. Fastened the working of Goldman's premier digital product *Marquee*.

Summer Internee, **University of Manchester**

Jun 3, '13 – Jul 12, '13

Professor Paul L.A. Popelier

Internship at the University of Manchester, UK in the field of **Machine Learning**: "Particle Swarm Optimization with the application of the *Kriging Model* on biological molecules". Extended the model to implement the Queen's Particle Swarm Optimization variant and achieved around **30% fastening** of the result prediction.

## PROJECTS

**Learning word vector representation in Multi-Task Framework(BTP)**

Jul '14 – Apr '15

Guide : Dr. Ashish Anand

Thesis project on artificial neural networks and deep learning on medical corpus to derive multidimensional word-vector representations for medical terms and evaluate the outreach (disease predictions) with the developed ANN.

**Writer Identification for On-line Whiteboard**

Feb '15 – Mar '15

Guide : Dr. Rashmi Dutta Baruah

Developed Gaussian Mixture Models approach, k-Means clustering approach to identify online whiteboard data's authors. The sets of features involved 50 users, and a set of metrics were evaluated for comparing the methods.

**Information Retrieval Infrastructure**

Sep '14 – Nov '14

Guide : Dr. Sanasam Ranbir Singh

Housing 10 GB worth of files; modeled TF, TF-IDF and BM-25 scores and created a language for queries (AND, OR, NOT) which is to be deployed in the CSE, IIT Guwahati as an in-house paper search for intranet.

**Sudoku Difficulty Performace Modelling Analysis**

Jan '15 – Mar '15

Guide : Dr. Vishv Mohan Malhotra

Analysis and performance modelling to evaluate Sudoku difficulty based on a number of factors like number of givens, grids, columns, rare digits and low candidates. The models used for the analysis were *linear regression*, *full factorial regression*, *multiplicative regression*, *Naïve Bayes*, and *decision trees*.

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## OTHER-PROJECTS

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- **Mess on Cloud** - A social engineering scheme to enable better utilization of the funds of students for the task of efficient running of messes as well as increased and healthy competition between mess vendors. A site for dynamic selection of the mess meals across all the available vendors of IIT Guwahati was made for the purpose
- **File and Folder Synchronizing Software:** In a group of 20, I worked out the algorithm design of a Dropbox™ like software that synchronizes changed files/folders on end-user's PC and reflects across all of the user's PCs.
- **File compression software** - Achieved **51% compression** of the text files using Huffman Text Compression.
- **Android GUI for Web-Based Virtual Breadboard Simulator** -Declared the *Best Project of the Batch*, developed an app for transporting a virtual breadboard's data to a server to emulate a live breadboard.

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## ACHIEVEMENTS

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- All India Rank **58** in **Codechef's** April Long Challenge, 2014
- All Asia Rank **79<sup>th</sup>** in **ACM ICPC Asia-Amritapuri Onsite**, 2013
- All India Rank **104** in **National Cyber Olympiad**, 2011
- All India Rank **139** in **National Science Talent Search Examination**, 2010
- Honorary mention in **Goldman Sachs Quantify**, 2014
- Certificate of Merit in **National Standard Examination in Physics**, 2011
- State Rank **2<sup>nd</sup>** in **Orissa State Talent Search Examination**, 2009

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## TECHNICAL PROFICIENCY

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- **Languages:** Proficient in C++, C, Scala, Java; Experienced in Python, Fortran, Shell, PHP, SQL, JavaScript, Haskell.
- **Software Packages:** IntelliJ, Eclipse, MS Visual Studio, Google App Engine, Codeblocks.

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## POSITIONS OF RESPONSIBILITY

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### Undergraduate TA (CS101) – IIT Guwahati

Jan '15 – Apr '15

Selected to tutor the *Introduction to Computer Science* course at IIT Guwahati as a new approach to make students understand. This was the *first time* undergrads were screened and given responsibility to tutor undergrads.

### Student Mentor – IIT Guwahati

Aug '14 - Apr '15

Mentored first year undergraduates of IIT Guwahati and help them in inculcating a healthy culture.

The program is aimed at bringing about a complete reform to the senior-junior interaction and culture in IITG.

### Web and Services Secretary – CSEA, IIT Guwahati

May '13 – Apr '14

1. Created repository from scratch: 554 GB worth of video tutorials, academic stuffs and a pool of software utilities.
2. Recorded **1120 unique hits** within 7 days of launch (accessible via **intranet**), average downloads of **1.6 TB** p.m.

### Webmaster – EDC, IIT Guwahati

May '12 – Apr '13

Handled the coding and web related activities of Entrepreneurship Cell of IIT Guwahati during 2012-2013.

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## RESEARCH PUBLICATION

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- Authored as a *top researcher* - "**On Optimizing Human-Machine Task Assignments**", which got accepted in AAAI Human Computation and Crowdsourcing (2015), San Diego, USA

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## EXTRA CURRICULARS

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- Completed the **21 kilometer Guwahati Half Marathon**, 2013
  - **Orange Belt**, Shito-Ryu-Genbu-Kai Karate-Do (Guide : Sensei Gauri Shankar Pradhan)
  - Core Member : IITG Entrepreneur Summit (2013, 2014)
  - Play **Violin, Harmonium** and **Basketball**.
  - **Ranked 1<sup>st</sup>** in the inter-hostel **Astronomy Overnight Quiz**, Kriti-2012
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