

Vishal Kaushal

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Areas of Interest / Career Objective

Bridging the gap between research and application by building software powered with Machine (Deep) Learning is what excites me. I am particularly interested in Machine Learning and Deep Learning for Computer Vision, Image/Video Analytics and Summarization problems in Computer Vision. I am currently open to exciting opportunities where I can use my strengths, skills and experience to the fullest and add value as a key member of a software development team.

Education

Doctorate (Pursuing)

Institute: **Indian Institute of Technology Bombay (IIT Bombay)**
Programme: **PhD**, Department of Computer Science and Engineering
Duration: July 2016 – current

Undergrad

Institute: **Indian Institute of Technology, Kharagpur (IIT Kharagpur)**
Major: Computer Science and Engineering
Programme: **Bachelor of Technology (BTech., 4 yrs.)**
Duration: July 2000 - May, 2004
CGPA (cumulative, at the end of 8 semesters): **9.61** (on a scale of 10.0)
Department Rank: 1 (Silver Medalist)
Institute Rank: 2

Post Grad

University: University of Pune

Institute: Vishwakarma Institute of Technology, Pune

Major: Computer Science and Engineering

Specialization: Information Technology

Programme: **Master of Technology** (MTech., 2 yrs.)

Duration: June 2012 – May 2014

CGPA (cumulative, at the end of 4 semesters): **9.75** (on a scale of 10.0)

Department Rank: 1, Institute Rank: 1

Higher Secondary (12)

Exam: All India Senior School Certificate Examination (CBSE Board), 1999 School: St. Michael's High School, Patna

PCM: 94.7% Aggregate: 92.0%

Secondary (10)

Exam: Indian Certificate of Secondary Education (ICSE Board), 1997

School: St. Karen's High School, Patna

Science & Maths: 95.5% Aggregate: 92.7%

Professional/Work/Project Experience

July 2017 - Mar 2020

Consultant (aiSight Video Analytics Private Ltd., SrivisifAI)

Architected and led a team for development of multiple software products for better security and compliance monitoring using automated machine learning based video analytics on surveillance cameras (involved image classification, motion detection, object detection, face detection, face recognition)

April 2016 – July 2016

Project Engineer, Industrial Research and Consultancy Center, Indian Institute of Technology Bombay

Video analytics for real-time alerts in surveillance applications (involved motion detection, object detection, face detection, face recognition)

January 2012 – March 2016

Assistant Professor, Department of Computer Engineering, Vishwakarma Institute of Technology, Pune

BTech projects guided

- o Using Invariant Traits in FB Status Updates for Personality Detection
- o Automated rating in web applications using collective intelligence
- o Creating ACO based classification and PSO based clustering modules in Weka for Data Mining
- o Predicting user's personality through Facebook data
- o Smart search engine using collective intelligence
- o Facebook horoscope, community detection and group recommender app
- o Gamification: gamifying an e-campus
- o Desktop Genie: Analytics on file system data using OLAP
- o BlueCon: mobile remote
- o Inventor: mobile inventory management system
- o LogMon: log monitoring and analyzing solution for enterprise applications
- o NewsGenie: personal news reading assistant
- o Ask Answer Service on Facebook
- o Inbox Helper – to make our email management simple and efficient

Academic courses taught

- o Computer Programming
- o Business Intelligence and Data Analytics
- o Advanced Data Structures
- o Operating Systems
- o Principles of Programming Languages
- o Advanced Java
- o Visual Basic .NET

April 2010 – till December 2011

Staff Specialist Product Developer, BMC Software, Pune

Worked in a niche research and innovations group with several projects in the domain of Data Center Management, Cloud Computing and Mobile Application development (iOS and Android)

December 2006 – till March 2010

Senior Member Technical Staff, Oracle India Pvt. Ltd., Bangalore

Worked as a key member in the Server Technologies' Real Time Collaboration product development group on several projects like Multi-User Chat Server Design and Implementation, Design and Implementation of Instant Messaging Server for Beehive, Oracle's Next Gen Collaboration Suite, Integrated UI for unit testing of Instant Messaging service, etc.

June 2004 – till November 2006

Member Technical Staff , Oracle India Pvt. Ltd., Bangalore

Worked as a key member in the Server Technologies' Real Time Collaboration product development group on several projects like XMPP (eXtensible Messaging and Presence Protocol) Service, Stanza Recognizer (to achieve two-stage parsing of XML/XMPP), Oracle Messaging and Presence Library, Time-Zone Synchronization for Oracle Web Conferencing, User Management Schema design, Context-based and user sensitive Help System, etc.

Internship (May 12, 2003 to July 18, 2003)

INRIA, France

Customization of Web Services for Improving Quality of Service, Project ARLES, at INRIA Research Lab, France (Institut National de Recherche en Informatique et en Automatique)

Achievements & Accolades

(in reverse chronological order)

Name	Description	Given By	Year
VIT Shri 2015, 2014, 2013	Well appraised faculty	Vishwakarma Institute of Technology, Pune	2015, 2014, 2013
VIT Shri 2014	Best debutant faculty based on consistent performance and contribution in last three years	Vishwakarma Institute of Technology, Pune	2014
ITIL v3 Foundation Certification with 92% marks	Certificate course on ITIL	TUV SUD Akademie GmbH	2011
Star Award	For Outstanding Performance and lasting contribution to the Incubator team	BMC Software, Pune	2010
Institute Silver Medal	Topper in CSE Dep, IIT Kharagpur	IIT Kharagpur	2004
Bigyan Sinha Memorial Prize	Second best student in the institute	IIT Kharagpur	2004
Selected for Summer Internship in Paris, at INRIA, France	On the basis of academic merit	INRIA, France	2003

J. C. Ghosh Memorial Prize	For securing highest CGPA at the end of 6 semesters	IIT Kharagpur	2003
2nd Runners Up, Sangana 0x7D3	Computer Science Quiz 2003	Dep of CSE, IIT Kharagpur	2003
Certificate of Merit	For securing 65th position among 1000 participating teams worldwide in Bitwise 2K2, an algorithm intensive programming contest	Department of CSE, IIT Kharagpur	2002
Felicitatation Award	For securing all India rank 191 in JEE 2000	FIITJEE	2000
All India Rank 191, JEE	Joint Entrance Examination for entrance to IITs	JEE	2000
Award of recognition	For excelling in CBSE class 12 exam	Rotary Club of Patna West	1999
Certificate of Merit	For outstanding academic performance and for being among the top 0.1% of successful candidates of AISCCE 99 in English Core	CBSE	1999
District Topper	Among all CBSE schools in Patna in 12th	CBSE	1999
Certificate of Merit	School topper in 12th and 11th	St. Michael's High School	1998-1999
Selected to attend a workshop-cum-tour held at IIT Kharagpur	Based on academic merit	IIT Kharagpur	April 1998
Certificate of Merit	Among top 3 students in 6th, 7th and 8th standards	St. Karen's High School	1993-1995

Publications

(in reverse chronological order)

- “A Unified Framework for Generic, Query-Focused, Privacy Preserving and Update Summarization using Submodular Information Measures”, Vishal Kaushal, Suraj Kothwade, Ganesh Ramakrishnan, Jeff Bilmes, Himanshu Asnani, Rishabh Iyer, October 2020, arXiv:submit/3412181
- “Realistic Video Summarization through VISIOCITY: A New Benchmark and Evaluation Framework”, Vishal Kaushal, Suraj Kothwade, Rishabh Iyer, Ganesh Ramakrishnan,

October 2020, Accepted paper at the ACM MM' 20 Workshop "2nd International Workshop On AI For Smart TV Content Production, Access And Delivery"

- *"Watch Hours in Minutes: Summarizing Video with User Intent"*, Saiteja Nalla, Mohit Agrawal, Vishal Kaushal, Rishabh Iyer, Ganesh Ramakrishnan, September 2020, Accepted paper at the ECCV' 20 Workshop "The 2nd Workshop on Video Turing Test: Toward Human-Level Video Story Understanding"
- *"A Framework towards Domain Specific Video Summarization"*, Vishal Kaushal, Sandeep Subramanian, Suraj Kothawade, Rishabh Iyer, Ganesh Ramakrishnan - Accepted paper at the 7th IEEE Winter Conference on Applications of Computer Vision (WACV), 2019, Hawaii, USA
- *"Learning From Less Data: Diversified Subset Selection and Active Learning in Image Classification Tasks"*, Vishal Kaushal, Rishabh Iyer, Anurag Sahoo, Khoshrav Doctor, Narasimha Raju, Ganesh Ramakrishnan - Accepted paper at the 7th IEEE Winter Conference on Applications of Computer Vision (WACV), 2019, Hawaii, USA.
- *"Demystifying Multi-Faceted Video Summarization: Tradeoff Between Diversity, Representation, Coverage and Importance"*, Vishal Kaushal, Rishabh Iyer, Anurag Sahoo, Pratik Dubal, Suraj Kothawade, Rohan Mahadev, Kunal Dargan, Ganesh Ramakrishnan - Accepted paper at the 7th IEEE Winter Conference on Applications of Computer Vision (WACV), 2019, Hawaii, USA.
- *"Emerging trends in personality identification using online social networks—a literature survey."* - Kaushal, Vishal, and Manasi Patwardhan. ACM Transactions on Knowledge Discovery from Data (TKDD) 12.2 (2018): 15.
- *"An automation framework for configuration management to reduce manual intervention"*, Supriya V Karale, Vishal Kaushal, Article No. 74, Proceedings of the International Conference on Advances in Information Communication Technology & Computing. ACM, 2016
- *"A Particle Swarm Optimization Based Approach for Finding Similar Users on Facebook"*, Pratik S. Kabara, Vishal Kaushal, Akshay Divekar, Mohit Kamdar, Devvrat Ganeriwal, Journal Of Computers, Volume 11, Number 1, January 2016
- *"Community Detection for Facebook Data of Student Hostel"*, Rupali Deshpande, Vishal Kaushal, Akshay Divekar, Devvrat Ganeriwal, Mohit Kamdar, Pratik S. Kabara, published in the proceedings of the National Conference on Modeling, Optimization and Control (NCMOC 2015) held at VIT, Pune from 4th March to 6th March 2015

Contribution as a Resource Person

(in reverse chronological order)

- Gave a talk on “**Machine Learning for Surveillance Video Analytics**” in Intel AI Academy Workshop held in IIT Bombay on 7th April 2018
 - Conducted a two-weeks workshop on “**Data Analytics**” for the employees of **Zensar Technologies**, Pune from 18th Jan 2016 – 29th Jan 2016
 - Conducted 5 days workshop on “**Object Oriented Programming through Java**” under **Infosys Campus Connect** programme from 14th December 2015 – 19th December 2015
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Some Workshops and Conferences Attended

(in reverse chronological order)

- Participated in **nVidia GTCx 2016** at Mumbai on 6th Dec 2016
- Participated in the **Summer School on Deep Learning for Computer Vision**, 11th-16th July 2016, IIIT Hyderabad
- Participated in a **Faculty Development Program** conducted by iGate Corporate University from 1st June to 5th June at Hinjewadi, Pune
- Participated in the **ACM India Workshop on Computer Curricula** held in Pune on 9th and 10th April 2015
- Participated in "**National Conference on Modeling, Optimization and Control**" NCMOC 2015 during 4th - 6th March 2015
- Workshop on **Mathematical Modeling in Computer Science and Engineering**, 8th - 12th July 2014, Organized by ACM Pune Professional Chapter and Vishwakarma Institute of Technology, Pune
- **Text Mining Workshop**, 6th - 8th Jan 2014, Organized by ACM Student Chapter ISI and ISI Kolkata
- **Aakash for Education**, 10th and 11th Nov 2012, ISTE Workshop for teachers by IIT Bombay
- **Introduction to Research Methodologies**, 25th June to 4th July 2012, ISTE Workshop conducted by IIT Bombay
- Workshop on **Stepping into Leadership II** (Conflict Management and Effective Leadership) in Nov 2011, conducted by Atyaasaa for BMC Software India Pvt Ltd.
- "**ITIL version 3 Foundation**" certification on 16th Nov 2011 with 92%
- Workshop on **Stepping into Leadership I** (Interpersonal Effectiveness and Team Dynamics) in Oct 2011, conducted by Atyaasaa for BMC Software India Pvt Ltd.

- Several technology workshops organized by Sun, Microsoft and the likes while working with Oracle
 - Was a member of ACM Student Chapter from November 2012 till November 2013
 - Participated in **11th International Conference on High Performance Computing** held during 19-22 December 2004 in Bangalore as a delegate from Oracle India Pvt Ltd.
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Selected Projects done as a student / out of interest

During PhD: IIT Bombay

- ML Workbench Tool to compare and contrast different state of the art techniques for a variety of computer vision tasks when applied to videos
- Face Recognition

MTech Project: VIT, Pune

Personality recognition from Facebook status updates: Extending PRT (Personality Recognition from Text) techniques to online social networks

Supervisor: Prof. (Dr.) Manasi Patwardhan, Head, Department of Computer Science and Engineering, Dean R&D, Vishwakarma Institute of Technology, Pune

BTech Project: IIT Kharagpur

Visual Language Processing: Computational Semiotics, Visual Languages and their grammars, Study of various methods and techniques of building a communication model facilitating human-computer and human-human interactions

Supervisor: Prof. Anupam Basu, Head, Department of Computer Science and Engineering, IIT Kharagpur

Summer Training (May 12, 2003 to July 18, 2003): INRIA, France

Customization of Web Services for Improving Quality of Service, Project ARLES, at INRIA Research Lab, France (Institut National de Recherche en Informatique et en Automatique)

Other Course Projects during MTech/PhD:

- Recognizing Indian celebrities in videos
- Comparing Eigen Faces, Fisher Faces and Local Binary Patterns for face recognition
- Developed an end-to-end working model of a batch operating system simulating the hardware and assembly language

Other Course Projects during BTech: IIT Kharagpur

- **OS:** Implemented a File System
 - **Electronics:** 4-bit CPU design, Lift Controller
 - **Compiler:** Developed a compiler for a subset of C
 - **Networks:** Implemented a POP3 mail client
 - **S/W Engineering:** Library Automation System Software in Java
 - **Databases:** Developed a web-enabled Movie Database System
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Technologies Used

Machine Learning: Python, scikit-learn

Deep learning libraries/framework: Caffe, PyTorch, Theano

Java technologies (J2SE, J2ME, J2EE)

Database design and development (PL/SQL, JDBC, Oracle, MySQL)

Enterprise application development (J2EE)

Web services (SOAP, REST)

Source Code Control System: Git, Perforce, ADE

Modeling: Star UML

Image Processing: MATLAB

UI development and Prototyping (Adobe Flex, Balsamiq)

Real-time collaboration (XMPP, SIP/SIMPLE)

Web Application development (HTML, CSS, Javascript, JSP, servlets)

Mobile Application development (Android, iOS, native and web)

Data mining, data warehousing: Weka, Oracle Warehouse Builder, OLAP, RapidMiner, Pentaho, QlikView

Data Analytics and Statistics: R

Extracurricular

- **Lifestyle management counselor** for many youths in premiere engineering colleges like IIT Kharagpur, IIT Chennai, NIT K, NIT W, RV College of Engineering, Bangalore, PICT, Pune, SRM University, Chennai
- **Anchored** various corporate and college technical and non-technical events

- Conducted several **personality development seminars** in esteemed institutes on topics like Art of Mind Control, Stress Management, Power of Habits, Mind Your Mind and Will Power to Excel
 - **Faculty in-charge for setting questions in Byte Code event** (Java coding competition) under Melange 2013 tech event
 - **Authored several technical articles** in college magazine (PI) and newsletters (Inside Incubator, BMC Software)
 - Acted as **spokesperson** for the Incubator team at various events while working with BMC Software
 - Designed and successfully implemented an **international idea generation contest** called IdeaJam across all the offices of BMC Software worldwide
 - **Published a monthly innovation newsletter** called "Inside Incubator", when working with BMC Software, which became highly appreciated and popular
 - **Library Secretary** 2001-2002, Nehru Hall, IIT Kharagpur
 - Participated in **Fourth National Youth Parliament Competition** held at IIT Kharagpur on 25th March 2001
 - Volunteered for several technical (IDEON), social and cultural (SpringFest) events at IIT Kharagpur in 2001
 - Attended the **combined annual training camp** held at Kalaikunda from 1st Dec 2000 to 10th Dec 2000 by NCC
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