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Summary

Self-motivated learner with a strong penchant for Data Science and Machine Learning. Other interest areas include big data analytics, optimizations, game theory and statistics. Excellent communication and collaboration skills. Experience in working on tight deadlines with minimal supervision.

WORK EXPERIENCE

- **Data and Applied Scientist, Microsoft IDC Bangalore** (27th June 2016 – present)
  Working on sponsored search advertisements on the BingAds platform, accomplished tasks like
  - Experimentation with stochastic modelling techniques to see if the accuracy for predicted performance indicators can be improved.
  - Improving predictions for advertiser parameters & incentivising advertisers to reveal true value for a click.
  - Large scale data storage optimizations to reduce the memory by >30% to decrease the cost-to-serve.
  - Deciding optimum parameters for maximum revenue generation subject to market constraints and modelling better pricing rules.
  - Improving the clustering mechanism to create better query distribution and automating its workflow.

- **ML Intern, Microsoft IDC Bangalore** 11th May –10th Jul 2015 (converted to a full time offer)
  Working on quality of ads in paid search advertisement section on the BingAds platform,
  - Engineered new features to existing ML models improving the precision by ∼5% recall by ∼10%.
  - Reduced the overall memory requirements of the ML model for cost optimization.
  - Orchestrated a workflow for quick & seamless deployment of new models to production.
  - Designed an automated near-real time solution to detect and notify about phished website/s.

Publication (B.Tech. Project, Jun'15 – Apr'16)

- Gaurav Mittal, **Kaushal B. Yagnik**, Mohit Garg, and Narayanan C. Krishnan. "**SpotGarbage: Smartphone App to Detect Garbage using Deep Learning.**" In Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing, pp. 940-945. ACM, 2016, Heidelberg, Germany. (link: http://dl.acm.org/citation.cfm?id=2971731)

  Detect garbage in unconstrained real-world images using state-of-the-art computer vision and machine learning techniques (using Convolutional Neural Networks). An Android App was made to deploy an optimized version of the model on a smartphone to check its feasibility. A webservice has been deployed at http://spotgarbage.com with a ready to use API available on Mashape.

HONORS AND AWARDS

- Won the **Microsoft Imagine Cup**, National Finals, India under World Citizenship Category, 2016.
- Winner of INAE (**Indian National Academy of Engineering**) Innovative Student Project Award at Undergraduate Level 2016.
- Winner of Young Innovator Award, College Section, MeltingPot2020 Innovation Summit 2016, India.

Academic Details

Course	Board/University	Year	CGPA
B.Tech. (CSE)	IIT Ropar, Punjab, India	Jul 2012 –2016	7.47
Std. XII (HSC)	St. Xavier's Loyola Hall, Ahmedabad (India)	March 2012	87.72 %tile
Std. X (SSC)	St. Xavier's Loyola Hall, Ahmedabad (India)	March 2010	88.31 %age

Major Projects

1. *SmartPlay:* Offline, personalized playlist generation which uses MFCC audio features of a song to get the mood of the song using a pretrained model to enqueue it in 'Now Playing' list. (Python)
2. *TraKinesics*: Manoeuvre screen-pointer using image processing techniques on hand-gestures from a webcam feed (MATLAB).
3. *OCR*: Handwritten digits recognition using Back-propagation in a Multi-layer perceptron on MNIST dataset.
4. *AndroidDJ*: Android app for creating a shared playlist for a DJ party, with functionalities like upvote/downvote, streaming from YouTube etc using a peer-to-peer network like Wi-Fi Direct.
5. *Lost & Found*: Intranet portal for institute students to post lost/found items with indexed searching. (Django)

Technical Knowledge

Deep Learning	Caffe, CUDA (NVIDIA), IPython (Jupyter)
Programming Languages	Python, R, C/C++, Java, C#, MATLAB
Software Packages	Visual Studio, Android Studio, ANTLR, Eclipse IDE, Photoshop
Web Development	Django, PHP, HTML, CSS, JavaScript, Ajax, WAMP / LAMP, LaTeX
DBMS	MySQL, PostgreSQL
OS Platforms	Windows®	Linux – Ubuntu

Relevant Courses

Contemporary Computing Platforms	Artificial Intelligence	Machine Learning
Programming Paradigms & Pragmatics	Data Structures and Algorithms	Computer Networks
Computer Architecture	Computer Vision	Operating Systems
Wireless Sensor Networks	Digital Image Processing	Software Systems Lab

Relevant Course Projects

Sudoku Solver: Using constraint satisfaction, and Boolean satisfiability for CNF. (Python)

OCR: Handwritten digits recognition using Back-propagation in a Multi-layer perceptron on MNIST dataset. (MATLAB)

Private IaaS Cloud: IaaS (Infrastructure as a Service) cloud to dispense and monitor VM's using VirtualBox as the hypervisor. (Java)

Board visibility detector (IoT): Detect low visibility of text on blackboard using an ad-hoc network of Intel Edisons and an Android smartphone.

Amazon Price Tracker: Analyse price trends of any product on Amazon to decide best time to buy it. (Scrapy)

AmazonS4: Using RSA-AES to encrypt files/folders before synchronously transferring them to Amazon S3 bucket.

Auto-SMS reporter: Get SMS updates and booking details (about rail PNR or similar bookings) by sending booking id sms to a particular device.

Relational algebra interpreter: Parse a relational algebra expression to generate a corresponding SQL query with proper syntax.

Other Achievements

- Microsoft India, **Hackcon'14** & **Build the Shield '15:** Stood 10th at the onsite round of All-India hacking competitions organised at Microsoft Hyderabad. (Team of 4, Mar 2014 & Mar 2015)
- Open-Soft: Stood 4th in the IIIrd Inter IIT Tech Fest Android App building competition, 2015
- Cleared **IIT-JEE** with All India Rank 2710 / 5,00,000.
- **Gold medal** at **National Science Talent Search Exam (NSTSE),** 2012.
- Cleared the **Kishore Vaigyanik Protsahan Yojana (KVPY)** fellowship exam by Government of India, 2011.
- Won the Bhaskar Genius Scholarship worth ₹1 lakh, 2011.

Extra-Curricular Activities and Hobbies

- Volunteer for Microsoft's Give Campaign activities like Blood donation, wall paintings for NGOs etc. Designing a solution in a team to close the demand / supply gap of volunteers and NGOs in Bangalore. (Nov '17)
- Elected member to the IIT Ropar Alumni Association Executive Council (Feb '17 – present)
- Student co-ordinator to Training & Placement Cell at IIT Ropar (Aug '14 – Apr '16)
- CSE Webmaster –Responsible for maintaining CS department website for the institute (Jun '13- Mar'14).
- Basketball club secretary at IIT Ropar (Jun '13- Apr '14)
- Played Basketball for IIT Ropar team at 48th, 49th, 50th Inter IIT National Sports Meets (Dec '12 – Jun '15)
- Amateur guitarist and salsa dancer.