KUMAR, Hemant ▸ SEASONED DATA SCIENTIST

CONTACT INFORMATION

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SUMMARY

MS in mathematics & computer science with 14 years of rich experience in Data Science, R&D, IT/Consulting with focus on Data-Mining, Machine Learning/ Deep Learning, Business Analytics, Mathematical and Statistical Modelling. Experience in pre-sales analytics and consulting in B2B area with exposure in domains like online search & display advertisement, retail, customer analytics and supply chain. Worked in creating POCs/POTs and IP creation. Driving innovation and enriched experience in working with internal and external stakeholders across geography in client facing engagements. Project Management, mentoring and supervising graduate interns from global top-tier institutes and universities.
Special mention : Problem-solving and thinking out-of-the-box impromptu with scientific bent of mind. ◼

EDUCATION

◇ **Indian Institute of Technology (IITG)** Guwahati — India
M.S., Mathematics & Computing — *Jun 2005*

◇ **Institute of Science - Banaras Hindu University (ISc-BHU)** Varanasi — India
B.S., (Honors) Theoretical Physics & Mathematical Science — *Apr 2003*

PROFESSIONAL PROGRAMS

◇ **McCombs School of Business – The University of Texas at Austin** — ONLINE/BLENDED
➕ **Great Lakes Institute of Management, Chennai, India** — BLENDED
Post-Graduate Program in Business Analytics & Intelligence (ML&AI) — *2018-19*

◇ **Jack Welch Management Institute** *at* **Strayer University** — ONLINE
Executive Certificate in Leadership & Strategic Management — *2018*

◇ **Johns Hopkins University (JHU)** — ONLINE
Specialized Certificate in Data Science — *2014-15*

◇ **Massachusetts Institute of Technology (MIT) - Professional Education** — ONLINE
Certificate course in Big Data Analytics — *2014*

COMPUTING SKILLS

- Languages: R, Python, SAS, SQL, C, Octave, MATLAB, MPI
- O/S Platform: Unix, Linux (Redhat, Ubuntu, SuSE), MacOS, WinXP/7
- Database Platform: MySQL, PostgreSQL, Informix, mongoDB,
- Applications & Text Processing: LaTeX 2$_\varepsilon$, MS Office, OpenOffice.Org
- Scientific Packages: Python (NLTK, SciPy, numPy, PANDAS), R Libs, Weka
- Machine Learning/Deep Learning: UIMA/GATE, TensorFlow, PyTorch, PySpark *etc*.

WORK EXPERIENCE

IBM Watson | Cognitive Systems — SINGAPORE
Software Architect - Data Scientist — *May, 2017 - Present*

◇ Working in the capacity of lead Data Scientist & Software Architect for IBM Watson Cognitive Supply Chain (SSCA-CoC). Designing an NLP based system for querying a database using natural language interfaces to create on the fly SQL codes using the IBM Watson suite of APIs along with custom machine learning, deep learning, NLIDB, technologies. Text Summarisation and NLP understanding with domain adaptation using deep learning (transfer learning).

● Driving innovations and bringing in AI capabilities to critical business applications as thought leader much ahead of time.

● PoC and the solutions which I have created are now a full-fledged product. My brainchild and pet project the 'Social Media Risk Analytics for Supply Chain' is a product offering (Ref: **'IBM Watson Supply Chain Risk Insights'**)

● My another pet project and PoC *'Catalgoue Data Optimization using External Pricing Intelligence Analytics'* is now a product rebranded as **IBM Pricing IQ**

WORK EXPERIENCE CONTINUED...
2015-2017

SAMSUNG Research | AI Center — Suwon/Seoul, KOREA
Senior Engineer - Machine Learning — *Apr, 2015 - Mar, 2017*

Worked in the capacity of Senior Data Scientist at Digital Media & Communication R&D (Intelligent Systems Lab) is part of Samsung Electronics HQ - Suwon, Korea.

◇ Worked in Deep Learning area for object (car) detection and classification. Investigating and using state-of-the-art techniques in some of deep learning frameworks.

◇ Worked in the area of In-Vehicle Infotainment systems. Work related to IVI standards, specifications and reference architecture implementation compliant to GENIVI Yocto. Using Automotive Grade Linux (AGL) codebase to create an IVI prototype for various portable hardware architecture. Hacked a working demo of Genivi compliant IVI and AGL.
◇ Worked with B2B Solution Lab, analyzed geo-fencing data. Proposed a fast computing algorithm for near-realtime coupon recommender systems based on geo-fencing and sensors data for a highly personalized in-store promotions recommendation. Disclosed an IP for this idea.

WORK EXPERIENCE
CONTINUED...
2011-2015

IBM Services | Analytics   SINGAPORE
Associate Architect - Advanced Analytics   *Jan, 2013 - Mar, 2015*
Associate Architect in Advanced Analytics at IBM Center-of-Competency of Cognitive Supply Chain Analytics.
◇ Conceptualized and lead multiple projects on text analytics for supply chain disruption risks and early warning system harnessing social media mining using Information Retrieval, NLP techniques and cognitive computing (IBM Watson) for spatial and temporal resolution. Conceptualized, created multiple project initiatives, managing the project while engaging and supervising graduate interns and stakeholders.
Other Project-1: Proposal Professor - The Proposal Professor is using Watson Cognitive Computing capability for helping to evaluate and writing winning business proposals. The PoC has evolved into a product called **IBM BlueScan**
Other Project-2: Participated in La Vida Watson hackathon. The POC 'Cognitive Computing based JudgeWatson for legal advisory services using Watson Q&A APIs', was voted top 10 ideas

IBM Research coLab - Singapore   SINGAPORE
Staff Software Engineer in Research   *Sep, 2011 - Dec, 2012*
IBM Research CoLab - Singapore part of co-located lab of IBM TJ Watson Research Center of IBM Research.
◇ Worked in Business Analytics & Mathematical Science (BAMS) unit for smarter planet initiatives mainly large-scale analytical projects with local Govt body. Worked in NLP area for social media surveillance system for effective public services. Scoped usage of multi-modal data system from multiple sources (Science Data) and design python API specification to use and query with low latency in an application like near real-time decision-making process and business analytics using statistical and data-mining techniques for spatio-temporal analytics. Visualization of geospatial model on ESRI ArcGIS and QuantumGIS.

WORK EXPERIENCE
CONTINUED...
2007-2011

Infosys Labs (Infosys Technologies Ltd)   Bangalore, INDIA
Junior Research Associate (Research Analyst)   *May, 2010 - Aug, 2011*
Software Engineering & Technology Labs (InfosysLabs), the R&D arm of Infosys.
◇ Worked as SME and researcher implementing various advanced analytics and machine learning techniques for creation of the product **Infosys-HIMI**. The implemented statistical techniques were the regression (linear, logistics), supervised learnings (classification), unsupervised (clusterings), and recommendation systems (collaborative filtering) etc. The Infosys HIMI works as analytics workbench for create, configure, and customize the in-built machine learning models for various domains. Created IPs and filed patent, got rewarded for the same from Infosys Research IPCell.

SETLabs (Infosys Technologies Ltd)   Bangalore, INDIA
Analyst-Specialist   *Feb, 2009 - Apr, 2010*
On tenure-track secondment to Infosys Research (SETLabs) from Infosys Consulting.
◇ Worked in the area of customer analytics. Research aspect area includes NLP, text mining and machine learning techniques applicable in the various domain using unstructured and structured data for a flagship product called Voice of Customer (Infosys HIMI VoC). Consulting aspect of work involves an ad-hoc request for proposal and consultation for RFPs, product landscaping, patent analysis. Liaisoning among the research team and product engineering team for integration of ideas/IPs for go-to-market.

Infosys BPM/Consulting - Infosys Ltd   Bangalore, INDIA
Analyst-Programmer   *Aug, 2007 - Jan, 2009*
Analyst at Analytics-Center of Excellence (**Analytics-CoE**), part of Infosys KPO/Consulting practices.
◇ Client: **Microsoft Corporation.** Worked with Microsoft's adCenter (Bing Ad) team being part of Infosys *Analytics Center of Excellence (ACoE)* incapacity of SAS programmer, Statistical Modeler and SME particularly in web-analytics area for MSN search and MSN Live (bing). Developed generic codes to crunch the data using data-mining techniques to offer analytical insight and consultancy in web-analytics and online search & marketing. Made a predictive and statistical model to help optimize the MSN ad placing, recommending automatic bidding strategy based on GSP Auction Theory.

ENTREPRENEURSHIP	**Startup: eLearning System**	Delhi/Pune, INDIA
2006-2007	*Technology Evangelist*	*Jul, 2006 - Jun, 2007*

⋄ Worked in pursuit of entrepreneurial interest for web-based student email service, development of e-learning system (K12) and cloud-based educational docket service. Evangelized and bootstrapped the idea while reaching out to angel investors.

RESEARCH	**Forschungszentrum Juelich GmbH**	Juelich, GERMANY
2005-2006	*Young Scientist*	*Oct, 2005 - Apr, 2006*

⋄ Worked as young scientist cum scientific programmer at Juelich Supercomputing Center of Helmholtz Research Center Juelich GmbH, Germany on serial and parallel open source code of Fire Dynamics in Computational Fluid Dynamics (CFD).

1. Worked on the open source code of FDS in the area of CFD in the serial and parallel environment. Wrote executables for data processing and analysis using C, MPI routines, and UNIX Shell-scripting.
2. Participated and collaborated with Fire and Safety engineering group of the University of Wuppertal. Part of work was funded by DFG for traffic simulation in stadia/arena to test the safety measure of the stadium in a likelihood of a stampede for the FIFA World Cup in Germany in the Year 2006.
3. Participated in Quantum Computer Simulation working group using the parallel processing paradigm for testing Shor's Algorithm. I wrote some code using OpenMP/MPI2 which achieved 32 Qubit quantum computer simulation using parallel architeture on JÜGENE (Juelich IBM Bluegene Supercomputing Cluster) in 2005-2006.

INTERNSHIP	**ISRO - Space Technology Cell**	IIT Kanpur, INDIA
2005-2005	*Research Intern*	*August, 2005 - September, 2005*

⋄ **Simulation of gaseous discharge in an EM field.** Worked on plasma physics modeling of jet thrust gaseous discharge. Used open source code (ES1) for 'Particle in Cell' model for simulations of 1-D Vlasov problem. `https://www.iitk.ac.in/dord/isro/`

❋ ACCOLADES AWARDS & REWARDS	⋄ *Helmholtz Young Scientist Fellowship, 2005.* ⋄ *Deutsche Forschungs-Gemeinschaft (German Research Foundation/DFG) Research Fellowship, 2006.* ⋄ *Secured highest percentile in a national level GATE'05 (Engineering Science) in IITG zone.* ⋄ *Merit-cum-means scholarship at IIT Guwahati during master coursework.* ⋄ *Won in 'On-the-Spot Programming Contest' in Technische 2005 at IIT Guwahati.* ⋄ *Infosys BPM Knowledge Services Award for Best Project Execution (7/7) with individual Client Appreciation 2008.* ⋄ *Infosys Extra-Miler 'Passion for Achieving Continuous Excellence' (PACE) 2009.* ⋄ *Innovation Award of USD 500 from IP Cell, Infosys Technologies Ltd., 2010.* ⋄ *Manager's Choice Award for Half-Yearly H2 2018 (Q3 & Q4) IBM Systems.* ⋄ *Manager's Choice Award for Half-Yearly H1 2019 (Q1 & Q2) IBM Systems.*

❋ PATENTS	● METHOD AND SYSTEM FOR CONTEXTUAL ADVERTISEMENT RECOMMENDATION ACROSS MULTIPLE DEVICES OF CONTENT DELIVERY. | *Granted-(USPTO# 2012/0078,725)* ● METHOD AND SYSTEMS FOR ONLINE AUCTIONING SERVICES FOR STABILITY AGAINST GAMING-OF-THE-SYSTEM. | *Filed* ● OPTIMIZING THE INVENTORY AND REPLENISHMENT WITH REAL-TIME-INFORMATION FLOW USING THE SKUS CODE. | *Filed* ● METHOD AND SYSTEM FOR MOBILE BASED PERSONALIZED HEALTHCARE MEASURES TO LOWER THE COST OF GROUP HEALTH INSURANCE. | *Disclosed* *.... a lot more disclosed and underfiling.*

🗐 TECHNICAL/ RESEARCH PAPERS	1. Kumar Hemant, (Dec 2004): *"Numerical Solution of 2D Navier-Stokes Equation for Incompressible Viscous Lid-Driven Cavity Flow"*, Department of Mathematics, IIT Guwahati. 2. Kumar Hemant (Jul 2005): *"Parallelization of Assembly of Stiffness Matrix in Shared Memory Environment"*, Department of Mechanical Engineering, IIT Guwahati. 3. Kumar Hemant, Bernd Koerfgen, Armin Seyfried, (Dec 2005): *"FDS: A User Interface for Simulation on Unix/Linux Platform"*, ZAM, Forschungszentrum Juelich, Germany. 4. Kumar Hemant, et al, (April 2006): *"Technical Report on Simulation of Pedestrian Dynamics with Bottle-Neck Effect"*, ZAM, Research Center Juelich, Germany 5. Kumar Hemant, Petra Jansen, Dora Erdös, et al.,(Apr 2009): *"Optimization routine for hot rolling mill"*, IJmuiden Research Lab, Corus Netherlands B.V., The Netherlands. 6. Kumar Hemant, Introductory book chapters on SAS Programming (2007-2009): *"Programming SAS in 7 Hours"*, Infosys Education & Research, Bangalore.

WORKSHOPS/ CONFERENCES

1. Mathematical Training & Talent Search (MTTS) held at IIT Guwahati (01st - 14th Dec, 2004)
2. NBHM and INSA Summer School on Stochastic Process & Applications held at IIT Guwahati (11th - 23rd July 2005)
3. Mathematical Modeling Week at the Technical University of Eindhoven, The Netherlands (28th March 2008 - 11th April 2008)

PROFESSIONAL TRAININGS @

- Certification in Project Management from IBM Center for Project Management Excellence (equiv to PMP)
- IBM certification in Project Management Essentials and Project Management Fundamentals equivalent to *IBM Project Management Professionals (PMP).*
- Certificate in Project Management and Enterprise Architecture from Australia Open University.
- Selected for organization wise few for exclusive "IBM Watson DeepQA and Beyond!" A training from original developer of jeopardy DeepQA system.
- Selected for prestigious Young Leadership Induction Program at Infosys Leadership Institute, Mysore, India.

SUPERVISING INTERNSHIP

- Industry supervisor for 3 MITB Analytics Capstone Projects from Singapore Management University, 29 Dec 2013 - 30 June 2014
- Industry supervisor for 7 MTech interns in Business Analytics and Knowledge Engineering Capstone Projects from National University of Singapore, 01 Aug 2013 - 30 Nov 2015
- Co-supervised 2 interns from prestigious **InStep** (global internship program) and 2 **Protégé** (Indian internship program) being part of Infosys Lab.

REFERENCES

Available on request.

github.com/khemant