Dr. Vipul Gupta, Ph.D.

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Key Facts

- Extensive experience in managing a team of excellent researchers, developers and tester for product development.
- Over 5 years of experience in classical data analytics, machine learning and artificial intelligence.
- Engaged in cutting edge research in multi-dimensional data analytics, text mining, machine learning towards solving multifarious complex problems.
- In-depth experience in developing end-to-end analytics framework in Python and R.
- Superior analytical, problem-solving and strong communication skills with experience in interdisciplinary teamwork.
- Experienced in conducted several data analytics training programs at world-class universities and conferences.

Employment

- **10/2018 – Present: Research Associate,** University of Cambridge, UK**, *&***
  Adjunct Researcher, The Systems Biology Institute, Tokyo, Japan**.**

  ⇒ Design and development of end-to-end analytics for millions of experimental data points.
  ⇒ Implementation of sophisticated algorithms towards solving multi-dimensional complex real-world problems.
  ⇒ Support/guide an array of brilliant scientist from across the globe in event of a scientific blockage.
  ⇒ Building user-friendly and highly efficient tools for non-technical community users.
  ⇒ Consultant to top pharma and FMCG companies across the globe.

- 11/2015 - 09/2018: Scientist, The Systems Biology Institute, Tokyo, Japan.
  ⇒ Developed and delivered AI-based solutions in pharma and non-pharma domains, such as:
    - AI-based toxicity predictor for top cosmetic companies.
    - Data-driven analytics for cancer sub-type identification.
    - Industry 4.0: Augmenting human intelligence with Artificial intelligence.
    - Automated literature-based discovery (LBD) using text mining.
  ⇒ Conduct high-quality research to ensure compliance with established industry standards, global regulatory guidelines and/or client contractual obligations.
  ⇒ Review/devise/relocate assets and solutions for complex client issues/problems.
  ⇒ Work collaboratively with the team to ensure timely review and release of reports to meet client requirements and deadlines.
  ⇒ Review and write new projects for clients.

- 02/2017 – 03/2018: Visiting Researcher, RIKEN, Japan
  ⇒ Advisor to the RIKEN's Systems Biology Unit.

- 02/2014 – 10/2015: Assistant Professor, Tokyo Medical University, Japan.
  ⇒ Collaborative research on cancer medicine with top pharma companies from the US and Japan.

- 10/2012 – 12/2013: Research Assistant, Tokyo Institute of Technology, Japan.
  ⇒ Teaching and research guidance to Undergraduate students.

- 10/2008 – 01/2009: Project Trainee, Centre for Cellular and Molecular Biology, Hyderabad, India.
  ⇒ Developed DSMPO**,** a web-server for protein motif analysis. http://203.200.217.185/DSMPO

Education

2009 – 2013 Ph.D. in Biological Information, Tokyo Institute of Technology, Japan.
Key points:

- ⇒ Discovered novel protein target of anti-inflammatory drug salicylic acid.
- ⇒ Published Peer-reviewed articles and book chapters in reputed journals.
- ⇒ Experience with protein crystallization techniques at Nureki Lab, University of Tokyo, Japan (PDB ID: 3W1W).

2005 – 2008 M.Sc. Bioinformatics with Distinction, Institute of Interdisciplinary Studies, University of Allahabad, India.
Key Points:

- ⇒ Stood second in the order of merit among the qualified students.
- ⇒ Developed computational biology skills and worked on a project titled: "Structure prediction and molecular simulation of gases diffusion pathways in hydrogenase". The work was published in a peer review journal.

2002 – 2005 B.Sc. Kirori Mal College, University of Delhi, India.
Key points:

- ⇒ Office bearer (treasurer) in the Zoology Society of Kirori Mal College, India.
- ⇒ Organized several inter-departmental meets and lab trips.
- ⇒ Winner and participated in different University level declamation and quiz competitions.

Awards, Fellowships and Grants

1. Italian Government Scholarship for research studies 2009.
2. South Korean Government Scholarship for PhD 2008.
3. Monbukagakusho MEXT Japan Scholarship for PhD 2009.
4. Japan-India Cooperative Science Programme, JSPS-DST Joint Research Project "Elucidation of mechanism of action of withaferin A using highly functional affinity beads" June 2012-May 2014.
5. Co-investigator Kobayashi International research grant 2014 with Dr. Satoshi Sakamoto, Assistant Professor, Tokyo Institute of Technology.
6. Second Topper of the M.Sc. Bioinformatics program.

Skills

- Expertise in classical data analytics, machine learning, natural language processing.
- Experience in probabilistic logic based reasoning, simplest dynamic Bayesian network like hidden markov models etc.
- Significant experience in programming in Python, and R, with deep know-how of C/C++ , PL/SQL, HTML, ASP, and Perl programming.
- Proficient in several biochemistry, cell and molecular biology techniques with hands on HPLC, UPLC, BIACORE and Isothermal Titration Calorimetry techniques.
- Webserver development: http://203.200.217.185/DSMPO
- Computer literate: MS Office, Macintosh and Windows, Linux platforms.
- Languages: English – fluent, Japanese – Intermediate (written and spoken), Hindi – native.

Publications

- **Vipul Gupta**, Alina Crudu, Yukiko Matsuoka, Samik Ghosh, Roger Rozot, Xavier Marat, Sibylle Jäger, Hiroaki Kitano, Lionel Breton. Multi-dimensional computational pipeline for

large-scale deep screening of compound effect assessment: an in silico case study on ageing-related compounds. (*Under Review npj Systems Biology and Applications*)

- Haruhiko Nakamura, Kiyonaga Fujii, **Vipul Gupta** et al., Weighted Gene Co-expression Network Analysis for Tissue Proteome Datasets of Small-cell Lung Carcinoma and Large-cell Neuroendocrine Lung Carcinoma to Identify their Key Networks and Hub Genes. *PLoS One* 2019 *(Accepted)*.
- Archana Bajpai, Ishii Takashi, Kosuke Miyauchi, **Vipul Gupta**, Yuka Nishio-Masaike, Yuki Shimizu-Yoshida, Masato Kubo, and Hiroaki Kitano. Transcriptomics Analysis of SOCS3-deficient Keratinocytes Reveals Insights Into Progression of Chronic Skin Disease. *Sci Rep. 2017; 7: 15830.*
- Susan Klaeger, Bjoern Gohlke, Jessica Perrin, **Vipul Gupta**, Stephanie Heinzlmeir, Dominic Helm, Huichao Qiao, Giovanna Bergamini, Hiroshi Handa, Mikhail M Savitski, Markus Bantscheff, Guillaume Médard, Robert Preissner, and Bernhard Kuster (2016). Chemical Proteomics Reveals Ferrochelatase as a Common Off-target of Kinase Inhibitors. *ACS Chem Biol.* 11(5):1245-54.
- **Vipul Gupta**, Thiprampai Thamamongood, Satoshi Sakamoto, Hiroshi Handa, and Yuki Yamaguchi. "Affinity Chromatographic Materials." Encyclopedia of Polymeric Nanomaterials. Springer, 2014. 1-8.
- **Vipul Gupta**, Shujie Liu, Hideki Ando, Ryohei Ishii, Yuki Kaneko, Masato Yugami, Satoshi Sakamoto, Yuki Yamaguchi, Osamu Nureki and Hiroshi Handa (2013). Salicylic Acid induces mitochondrial injury by inhibiting ferrochelatase heme biosynthesis activity. *Mol Pharmacol* 84(6):824-33.
- Shanthy Sundaram, Ashutosh Tripathi, **Vipul Gupta** (2010). Structure prediction and molecular simulation of gases diffusion pathways in hydrogenase. *Bioinformation* 5(4): 177-183.

Patent

- **Application submitted :** "*Anti-influenza agents targeting host factors*"

Presentations (Workshop/Oral/Poster)

- 2017 Garuda Workshop, Sapienza - Università di Roma.
- 2016 Garuda Workshop, InCoB Singapore
- 2015 International Conference on Systems Biology, Singapore: Attended
- 2015 CDRI, Lucknow, India: Talk
- 2014 Department of Biochemistry, SHIATS Allahabad, India; Talk
- 2014 Centre for Food Technology, University of Allahabad, India; Talk
- 2013 ICBS 2013: The 2nd Annual Conference of the International Chemical Biology Society, Kyoto, Japan; Poster.
- 2013 Centre of Biotechnology, University of Allahabad, India; Talk
- 2012 International Symposium-cum-training Workshop on "Recent trends in Bioinformatics, Systems Biology and Biomolecular Interactions", University of Allahabad, India; Talk
- 2011 The 34th Annual Meeting of the Molecular Biology Society of Japan; Poster.
- 2011 Molecular Biology Institute Research Conference, University of California Los Angeles, USA; Poster.
- 2011 Bio-GCOE Summer School & International Conference, Kyoto University; Poster.
- 2009 GCOE Summer School "Evolving Education and Research Center for Spatio Temporal Biological Network", Hayama, Shonan Village, Japan; Poster.