

# Sukhdeep Singh



## Contact

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## Area of Expertise

ChIP-Seq, RNA-SEQ, NGS  
data analysis, open source,  
high performance computing,  
complex data visualizations.

## Programming Languages

♥ R, Bash/Shell, Javascript,  
Perl-CGI, HTML, CSS, LATEX

## Extra Curricular Activities

♥ Hiking, Regular  
volunteering in Eco -  
Conservation and Social  
Innovation projects, Biking,  
Ultimate Frisbee, Lead  
national/international hike  
tours, Globe trotting, Djing,  
Peak bagging.

## Publications

<http://is.gd/sukhi>

## Access this CV online



## Resume

Currently working at **Biotec** - Technical University of Dresden. My major research interests are computational **epigenetics**, investigating **histone modifications** and understanding **transcriptional** machinery in mouse **embryonic and differentiated stem cells**. I have been developing **computational pipelines** to handle and analyse the plethora of **NGS datasets** generated in-house and collaborating labs utilizing **High-Performance** computing. I have worked in diverse settings in several team-based and independent projects, where I have gained extensive computational, leadership, presentation, **independency** and large project organization skills in a broad range **scientific international environment**.

## Research Experience

- |                    |   |                  |
|--------------------|---|------------------|
| Jul, 2011 -        | <b>BIOTEC - Technical University of Dresden</b><br><i>Bioinformatician and PhD Student</i><br>Working with <b>Prof. Francis Stewart</b> on Investigating Transcriptional and Epigenetic Foundations of Ground State of Pluripotency and Up and several other collaborative projects. I have created automated data pre-processing and analysis pipelines utilizing HPC for next generation sequencing datasets (ChIP-Seq, RNA-Seq). | Dresden, Germany |
| Aug - Sep, 2011    | <b>Wellcome Trust Sanger Institute</b><br><i>Visiting Researcher</i><br>Worked with <b>Dr. Vivek Iyer</b> on correlating gene targeting efficiencies with gene trap counts and the homology of 5' end repeats using the EUCOMM recombineering targeting vector resource.  | Cambridge, UK    |
| Oct,10 - Apr, 2011 | <b>Imperial College London</b><br><i>Visiting Researcher</i><br>Worked with <b>Dr. Becca Asquith</b> for investigating viral (SIV) dynamics using NGS to identify specific tissues which could be initial drug delivery sites by measuring viral escape rates in primates. R package for the viral data analysis capable of processing large sequences was developed.   | London, UK       |
| Jul - Sep, 2010    | <b>Imperial College London</b><br><i>Visiting Researcher</i><br>Worked with <b>Dr. Timothy Ebbels</b> on detailed analysis of LCMS data for identification of parent fragment pairs and investigation of coelution. R package <b>LCMStats</b> was developed.  | London, UK       |
| Jul - Aug, 2009    | <b>University of Leicester</b><br><i>MSc Steered Research Project-2</i><br>Developed a web application called as <b>WebModeller</b> using Perl-CGI for proteomic data analysis and 3D modeling of a novel protein sequence.   | Leicester, UK    |
| Jun - Jul, 2009    | <b>University of Leicester</b><br><i>MSc Steered Research Project-1</i><br>Microarray analysis to identify circadian genes from array profiles generated from Rat's Suprachiasmatic Nucleus.  | Leicester, UK    |
| Nov - Jan, 2009    | <b>IPradar, Portus Corporate Finance</b><br><i>Biomedical Market Research Project</i><br>Analysis of relationships between diseases and technologies within a medical specialty and construction of a data resource of companies utilizing these technologies for surgical and non-surgical methods of spine.   | Berlin, Germany  |

## Education

Jan, 2009 - Jan, 2010

**University of Leicester**

Leicester, UK

**MSc in Bioinformatics (Merit)**

Thesis: Structured Spreadsheet Web Interface for Neurophysiology Data Analysis. A web-application was developed for a functional reactive programming language (Bugpan) for experimenting on dynamic systems.

Aug, 2004 - Jul, 2008

**Kurukshetra University**

Kurukshetra, India

**B.Tech in Biotechnology (First Class Honours)**

Major Project: Drug Discovery for kidney stones using natural products.

## Internships

Jul - Aug, 2007

**Tulip Group of Companies**

Goa, India

Manufacturing and production of diagnostic kits, quality control and global distribution.

Jun - Jul, 2006

**IBI Biosolutions**

Chandigarh, India

Training on in silico drug designing while finding potential drug for measles.

Jan - Feb, 2006

**Creades Technologies**

Noida, India

Training program in advanced Bioinformatics software and applications.

## Awards

Sep, 2014

**German Stem Cell Network (GSCN) Travel Award**

Hydra, Greece

For European Summer School on Stem Cells & Regenerative Medicine (Hydra-X)

Jun, 2012

**European Cooperation in Science and Technology (COST) Travel Award**

Espoo, Finland

For attending NGS workshop at CSC-IT Center for Science Ltd.

Jun, 2008

**Biotechnology Ethics (BIOTETHED) Travel Award**

Budapest, Hungary

Complete fee and travel waiver for attending 5th European Course on Biotechnology Ethics.

Aug - Sep, 2007

**Studentship by German Academic Exchange Program (DAAD)**

Wilhelmshaven, Germany

For attending summer course 'Biomedical Engineering in a European Perspective' at FH-OOW.

Mar, 2007

**ABHIYAAN-2007**

Mumbai, India

Third prize in ScrewDaBug contest at a national level technical And cultural festival.

Nov, 2006

**VENATIO-2K6**

Haryana, India

Second prize in web designing contest at a national level technical symposium.

Feb, 2006

**Environment Day Consolation Prize**

Haryana, India

For "BioGas Plant" model in a state level competition by the Dept. of Renewable Energy.

## Talks and Posters

Mar, 2015

**Program of Early Mammalian Development and Systems Biology of Stem Cells (T)**

Oberstdorf, Germany

The H3K4 Methylation System in Mouse Embryonic stem cells.

Nov, 2014

**Systems Biology of Stem Cells and Reprogramming (SYBOSS) Annual Meeting (T)**

Cologne, Germany

Extracting the most out of your ChIP-Seq datasets.

Jul, 2013

**12th European Conference on Computational Biology, ISMB/ECCB (P)**

Berlin, Germany

Investigating genome wide dynamics of histone methyltransferases in mouse ESCs (also volunteered).

Apr, 2013

**Gene Regulation and Information Theory (T)**

Halle, Germany

Investigating genome wide dynamics of histone methyltransferases in mouse ESCs.

Apr, 2013

**Deep Sequencing Day (T)**

Dresden, Germany

Next Generation Sequencing in Epigenetics.

Feb, 2013

**Syboss/Digtop Workshop (T)**

Dresden, Germany

Genome wide dynamics of Setd1a Complex.

## Extracurricular

Jan, 2013 - current

**Biostars.org**

Worldwide Access

Moderator at BioStar: An Online Question & Answer Resource for the Bioinformatics Community.

Jun - Jul, 2015

**Ryfylke Outdoor Recreation Board (Ryfylke Friluftsråd)**

Lindoy, Norway

Volunteer with Ryfylke Friluftsråd for ensuring general public access to the recreational areas.

Aug, 2014

**Lysefjorden Utvikling AS**

Lysefjord, Norway

Volunteer with Lysefjorden Utvikling for Trail maintenance and repair.

Jul, 2012

**Global Foundaries Inc.**

Radebeul, Germany

Participated in Futurabia, a four day industry organizational simulation game