

# SANDEEP SHANTHARAM

9, Lewis Street,  
Everett, MA – 02149

LinkedIn: <http://www.linkedin.com/in/machbio>

Email: [sandeep.1987@live.com](mailto:sandeep.1987@live.com)

Phone: +1-707-726-6224

Website: <http://machbio>

Information Technology professional with 6+ years' experience in Software Development and Data Analysis seeking a full time role to utilize my expertise in translating business requirements into technical solutions.

---

## Professional Experience

### Software Developer

September-2015 to Present

#### Biogen, Inc. – Cambridge, MA, USA

- Building and maintaining Next Generation Sequencing (NGS) Pipelines suited to run on different workflow managers (Snakemake, Nextflow) using the High Performance Computing (HPC) on premise and AWS Cluster which includes a server framework for any client systems to launch pipelines using the servers' RESTful APIs.
- Automated the FASTQ file generation from Illumina sequencing machines (HiSeq, MiSeq and NextSeq) using Illumina software tools (bcl2fastq) and associated the sequencing data to projects by querying project management tool (Workfront).
- Enhancement of a data gathering and analysis tool with multiple components that included a native Windows client, Django web application and AWS platform services in accordance to the business requirements defined in the design documents.
- Developed and Enhanced features for an internal prototype application to visualize complex data networks – which included an end to end web based system consisting of Java web Application (Spring Framework), Javascript Application (Keylines.js, jQuery), Python restful application (Flask), Graph Database (Neo4j) and SQL database (PostgreSQL).

### Research Assistant

August-2013 to August 2015

#### School of Informatics, Indiana University – Purdue University, IN, USA

- Implemented a Big-Data Analytical Platform to analyze Biological Datasets for discovering drug leads for Cancer diseases – the platform consisted of Data Analysis Tools (Spark, Hadoop and scikit-learn), Python Web Application (Flask) and Polyglot Datastore (Neo4j, PostgreSQL, Elasticsearch).
- Analyzed Transcription Factor Network in Breast Cancer using NGS software tools (Bowtie, TopHat, Cufflinks) to identify a potential miRNA regulatory mechanism that contributes to up regulation of a transcription factor network following elevated levels of estrogen treatment in estrogen positive breast cancer cell line MCF-7.

### Data Analyst Intern

June-2014 to August-2014

#### Pacific Northwest National Laboratory (US Department of Energy), Data Science and Analytics Group, WA, USA

- Data and Statistical Analysis for Time-Series data of an Infectious disease, with forecasting the number of potential cases with data from Social Media, Weather and Historical Data. Built the software framework of backend Python RESTful Application (Flask) and frontend interface with AngularJS, lead to a HTML5 mobile app and converting it into apps for all mobile platforms with Ionic framework.

### Software Developer

January-2010 to July-2013

#### Tata Consultancy Services. Ltd, Bangalore, India

- Designed and Implemented the System Architecture including database design of an application for Ceridian Tax Services. Enhanced the product features to comply with US regulation changes for Citi Cards Credit Services. Programmed Application for the functioning of Risk Management Systems for American Express Credit Card Services.

---

## Publications

Huang, H., Nguyen, T., Ibrahim, S., Shantharam, S., Yue, Z., & Chen, J. Y. (2015). **DMAP: a connectivity map database to enable identification of novel drug repositioning candidates.** *BMC bioinformatics*, 16(Suppl 13), S4.

---

## Technology Summary

Languages	:	Python, Java, R, Javascript, Shell Scripting, COBOL
Databases	:	MySQL, PostgreSQL, Oracle, MongoDB, ElasticSearch, Neo4j, SciDB, Redis
OS Platforms	:	Linux, Windows, UNIX, z/OS (Mainframe)
Software Tools	:	Hadoop, Apache Spark, scikit-learn, Tableau
DevOps	:	Docker, Kubernetes, Mesos, Nginx, Apache, Tomcat, Bamboo, Travis, Jenkins
Bioinformatics Tools	:	Bowtie, BWA, TopHat, Sailfish, Cufflinks, STAR, RSEM, FASTx Toolkit, Galaxy, GATK, IGV, Entrez Utilities, SRA toolkit, Cytoscape, GSEA, UCSC Genome Browser

---

## Education

### Master of Science in Bio-Informatics,

May 2015

Indiana University – Purdue University, IN, USA

### Bachelor of Engineering in Bio-Technology,

July 2009

Visvesvaraya Technological University, Karnataka, India

---