Bharat **Singh**

B.Tech - M.Tech Dual Degree · Information and Communication Technology and Cognitive Neuroscience (Minor)

University of Rajasthan Jaipur

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Education

Centre for Converging Technologies, University of Rajasthan
Jaipur, India

B.Tech - M.Tech Dual Degree, Information and Communication Technology and Minor in Cognitive Neuroscience
2015 - 2020

- Rank in Top 3. Cumulative Performance Index / **CGPA: 4.6/6.0**

Work Experience

Bioinformatics Infrastructure Facility, Department of Biotechnology (DBT)
Jaipur, Rajasthan

Research Intern, BTISnet Jaipur
July. 2018 - Present

- Worked on Google BigQuery, AWS services, Galaxy to Annotate, Align and Querying Genomic Databases, features requested by industry in Bio-informatics.
- Created a web enabled tool for finding unique DNA fragment. project includes database and phylogeny tree creation. it involves use of graph data structure, MongoDB, Searching, allignments, kmer manipulations and bioinformatics for client-servers
- Designed Algorithms for Extraction, Preprocessing, Sequencing, Searching of Genomic Database and Networking for phylogeny using Python, shell scripting. Used Machine learning and statistical inference for data analysis, classification and prediction in Genomic database

CCT Department, University of Rajasthan
Jaipur, India

Full Stack Developer, under Prof. Abhilasha Dangi
Feb. 2017 - May. 2017

- Worked on a scalable microservice based web application with an extensive technology stack.
- Designed and developed critical backend features while ensuring type-safety.
- Developed and deployed the complete functionality in institution
- Adjudged as one of the best project, while being a freshman.

Projects

Biosensor-Python
DBT-BIF Jaipur

Research Project, Prof. Sumita Kachhwaha
July. 2018 - Sept. 2018

- Created a web enabled tool for finding unique DNA fragment that also draw phylogeny of life.
- Designed a module in python for Extraction, Parsing, Pre-processing, Sequencing, Searching of Genomic Database and Networking for phylogeny of life.
- Used Machine learning and statistical inference for classification and prediction in Genomic database

Senior Students Placement Cell
University of Rajasthan, Jaipur

Course Project, Prof. Abhilasha Dangi
Feb. 2017 - May. 2017

- Conceptualized new web 2.0 based IT services such as Interest Group Discussion Forums, Senior alumni Information and contacts, Campus Wiki, Project Database
- Allow easier collaboration, better information organization and formalizing undocumented technical.
- Designed intuitive user interfaces and work-flows for these services and customization then finally deploy these services in the institute

Thought Reading Device: Predicting Text by EEG signals (BCI)
IIT Guwahati

Research Project, Team of 2 members
Nov. 2016 - March. 2017

- Designed Computational model to infer psychological state of human brain with one colleague.
- used BrainIAK software that allows for decoding digital brain data to reveal how neural activity give rises to learning, memory and other cognitive function.
- Used viterbi force alignment and hidden markov model for mapping phone sequences to word.

PageMatrix : Co-founder *Jaipur*

Individual Project, Dr. Rakesh Sharma *May. 2018 - Aug. 2018*

- Designed and Developed a SEO Tool for Page-ranking, Links and Emails Extraction and Keyword prediction for websites with team of three members.
- Build Python scripts and used Django, Shell scripting to set up Frontend, Backend and Sqlite3 for database.
- Deployed on web for 3 months, with 1800+ users and 45 matches.

Pneumonia Detection: Deep learning *CCT Jaipur*

Leader, Team SudoHack Project *Sep. 2018 - Nov. 2018*

- Build an algorithm that shows good confidence interval in detecting pneumonia and Automatically locate lung opacities on chest radiographs and medical images.
- Used TensorFow, CNN model: DenseNet169 for transfer learning, and predict lung opacity by loading models.
- Finished in top 10 teams from all over India at LNMHacks 3.0.

Conferences/Workshops & Certificates

2017	**National Symposium on Cognitive Science**, Poster:"Thought Reading Device"	*IIT Guwahati*
2016	**High Performance Computing**, Techfest IIT Bombay	*IIT Bombay*
2018	**Annual Conference of Cognitive Science**, Participant	*IIT Guwahati*
2019	**Young Statisticians Meet:Data Science in action**, Attending	*ISI Kolkata*
2018	**Tools of Research**, Oral Presentation	*CCT Jaipur*
2018	**Microsoft Professional Programme: Data science**, EdX Certificate	*Jaipur*
2018	**Introduction to Machine Learning**, NPTEL Certificate	*Jaipur*

Skills

Programming C/C++, Python, Haskell, Matlab, MySQL, PHP, Java

Web Django, Flask, Apache Server, CSS, JavaScript

Utilities Linux shell utilities, Git, Google Cloud, Galaxy, Azure ML Studio, Biopython, LaTeX

Extracurricular Activity

Coordinator Centre for Converging Technology, Jaipur *Sep.8-9th, 2018*

- Organized and conducted 'Cloud Computing Seminar'
- Organizer and volunteer of cultural event of Department 'JALSA 2K17'

Hackathon Finalist, Winners *March 2018, Oct. 2018*

- Rajasthan IT Day- eduHack 4.0 - Finalist
- LNMHacks 3.0 LNMIIT, Jaipur - Finalist
- MLH Local Hack Day, Jaipur - Winners

Cognitive Science Association of India Member *Sept. 2018-Present*

Relevant Coursework

A*	Machine learning	A*	Artificial Intelligence	A*	Functional Programming
A*	Computer Organization	A*	Computer Network	A*	Data Structures and Algos
A*	DBMS	A*	Quantum Computing	A	Computational Neuroscience
A	TCP - IP	A	Dynamical system for Neuroscience		

A: Grade for exceptional performance* *A: grade*

Miscellaneous

- Blog about Machine learning, Data science and some Programing topics at bharatpurohit97.github.io
- Contribute to open source projects like Coala,Python,GA4GH on Github.
- Administered a cloud in CCT DEPT., deploying and managing services for the campus community.