

# GURPREET SINGH

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<https://gur-p-reet.github.io/portfolio/>  
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## TECHNICAL SKILLS

**Languages:** SQL, Python, Java, JOGL, PostgreSQL, SAS programming, HTML, CSS, JavaScript, Fortran, Latex

**Frameworks/Libraries:** Pandas, Scikit-learn, Numpy, Matplotlib, Seaborn, TensorFlow (Keras), Hadoop, Spark, ReactJS, ExpressJS, Node.js, NPM, Docker, AWS, Azure, Google Cloud Computing (GCP)

**Other:** MS Excel, PowerBI, MSSQL Server, Tableau, MS Office, Git/GitHub

## WORK EXPERIENCE

### ZE Power Group Inc. – IT Support Specialist

Richmond, BC | March 2021-Present

- Provided support to windows OS, MS Office, Exchange and Active Directory administration and other end user issues.
- Analyzed and resolved incidents and service request in a timely and accurate fashion.
- Installed, diagnosed, repaired, maintained and upgraded all PC hardware and peripheral devices to ensure optimal computer performance.

### University of Northern British Columbia – Teaching Assistant

Prince George, BC | Sept 2016-Dec 2018

- Delivered instructions to meet course objectives and accessed students' performance/grades.
- Provided project guidance and motivation for students to complete their project within the given deadline.
- Participated in professional development activities and worked closely with other instructors and staff.

### Raman Laboratory, Panjab University–Research Assistant

Chandigarh, India | April 2011-March 2016

- Collected, cleaned and structured the data from different spectroscopic experiments (MS Excel, Spekwin, Linux-Vim).
- Utilized quantum chemical modeling for molecular structure optimization and spectroscopic predictions (Gaussian, HPC, Games, Putty, Linux-SSH). Optimized the model predictions via hyperparameters tuning.
- Employed different statistical techniques and tools to study patterns, correlations and evaluation metrics.
- Published new findings in different conferences/symposia and scientific journals (Latex).

### Chandigarh College of Eng. and Tech.– Software Developer/lecturer

Chandigarh, India | July 2010-April 2011

- Maintained and updated college website (HTML, CSS, JavaScript) and also worked as a lecturer.
- Designed web forms for online applications. Updated College website with scientific facilities/events. Increased user satisfaction scores.

### Cyclotron Laboratory, Panjab University– Research Assistant

Chandigarh, India | Aug 2008-June 2010

- Collected and cleaned data from heavy-ion fusion experiments at IUAC, New Delhi, India ( $^{28}\text{Si} + ^{45}\text{Sc} \rightarrow ^{73}\text{Br}$  and  $^{32}\text{S} + ^{45}\text{Sc} \rightarrow ^{77}\text{Rb}$  reactions at 78 MeV and 71 MeV).
- Analyzed experimental data and compared results with model predictions (statistical and dynamical models)

## MAJOR PROJECTS

### Dog breed Identification

- Conducted preprocessing of given set of images using Tensorflow.
- Built model with the help of deep learning Keras API using mobilenet\_v2.
- Trained the model on more than 10,000 images. Made predictions for test data via calculating prediction probabilities

### Bulldozers Sales Prediction

- Trained the model using RandomForestRegressor from Scikit-learn
- Employed RandomizedSearchCV for hyperparameter tuning and predicted future sale prices and calculated the RMSLE

### Smart Sense

- Developed the front end using React library. Utilized Node.js, Express.js and PostgreSQL for back-end development.
- Deployed the application on Heroku and linked the application with Clarifai API for face detection.

### Protein Structure Optimizer

- Designed/Developed an interactive user interface using Java and JOGL.
- Implemented meta-heuristic optimization algorithms and on-demand hybridization among algorithms.
- Employed different options for input, output and analysis of results and parallelized high computational steps.

## EDUCATION

**M. Sc.** (Computer Science)– University of Northern British Columbia

Prince George, BC | Sept 2016-April 2019

**Ph. D.** (Physics-Computational Chemistry/Molecular Spectroscopy)– Panjab University

Chandigarh, India | July 2010-Nov 2015

## RESEARCH PUBLICATIONS

Six research publications in different scientific journals and fourteen publications in conference/workshops/symposia.