# Gurkamal **Deol | Bioinformatics Software Developer**

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## Education

**The University of Guelph**                                                                    *Guelph, ON*
MASTER OF BIOINFORMATICS IN CONCENTRATION - MACHINE LEARNING                 *Sep 2018 – Aug 2019*

**The University of Western Ontario**                                                         *London, ON*
BSC. IN HONORS SPECIALIZATION IN GENETICS | PHARMACOLOGY                        *Sep 2012 – Jun 2017*

## Work Experience

**Cyclica Inc**                                                                                    *Toronto*
BIOINFORMATICS DEVELOPER (CO-OP)                                               *Apr 2019 – Aug 2019*
- Worked in a jupyter notebook environment heavily utilizing pandas, numpy, and RDKit
- Created and developed a database of 17 million compounds, records included structural, chemical, and commercial information.
- Developed a pipeline which searches the custom database while computing similarity scores for millions of compounds using python postgreSQL, and RDKit

**The University of Western Ontario**                                                         *London, ON*
RESEARCH ASSISTANT                                                            *Apr 2016 – Jun 2017*
- Thesis Project: Detecting Prostate Cancer Using Tumor-Activatable Minicircles Encoding the Secreted Biomarker SEAP
- Data collection using the following experimental procedures: Bioluminescence imaging of cells; Western blotting; BCA assays; Immunocytochemisty; PSA testing - ELISA kit.
- Producing Tumor-Activatable Minicircles - Steps include transgene cloning, DNA extraction/isolation; PCR; transformation, cloning, plasmid purification.

## Languages and Tools

**Python:** Scikit-learn, pandas, RDKit, Django, Seaborn
**R:**       Caret, glmnet, Tidyverse, Vegan
**Tools:**   Linux, postgreSQL, Github, Virtual box, Jupyter

## Selected Projects

**Classifying p53 agonists using molecular fingerprints as features with sklearn and RDKit.**                                        *Python, RDKit, Jupyter, Scikit-learn, Seaborn*
THIS PROJECT ANALYZES THE THE ABILITY OF FOUR SEPERATE MOLECULAR FINGERPRINTS AS FEATURES FOR CLASSIFYING P53 AGONISTS. THE PROJECT LOOKS AT CLASS IMBLANCE, SCORING METRICS, AND MODELING USING: LOGISTIC REGRESSION, KNN, AND GRADIENT BOOSTING.

**Faq2Var**                                                                  *sickle, sabre, SamTools, HTSlib, BCFtools, bwa*
A PIPELINE WRITTEN IN BASH THAT TAKES A FASTQ FILE AND RETURNS A VCF FILE.

## Certificates and courses

| | | |
|---|---|---|
| ongoing | **Neural Networks and Deep Learning**, | *deeplearning.ai* |
| ongoing | **Convolutional Neural Networks**, | *deeplearning.ai* |
| June 2019 | **Programming Foundations: Algorithms**, | *Lynda.com* |
| June 2019 | **Programming Foundations: Data Structures**, | *Lynda.com* |