Orpita Das, M. Sc.

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https://github.com/odas/lantern-toronto.git

PROGRAMMING/DATA ANALYTICS SKILLS

LANGUAGES

Python : Intermediate level.

Packages: NumPy, Pandas, Matplotlib, Seaborn, Sqlite, Scikit-Learn, Keras.
Project (on github): Identifying an individual's lifestyle patterns from Samsung Health device data.
Data Cleaning, Standardization, Outlier detection, Exploratory Data Analysis.

R : Fundamental level.

Project (on github): Forecasting LIBOR financial Interest rates by model fitting.
Some packages used: xts, sde, corrplot, fitdistr.
Timeseries analysis, Figure preparation for publications.

SQL : Fundamental level.

Skills: Querying databases & Joins

C++ : Basic level. Undergraduate introductory course taken.

SOFTWARE:

Advanced Microsoft Excel for Data Analytics: Functions like COUNTIFS, SUMIFS, SUMPRODUCT, INDEX/MATCH, VLOOKUP, Pivot Tables, Importing and Exporting data to Excel, Charts.

COURSES

Data Science & Financial Mathematics program September 2019 - present
Lantern Institute, Toronto, Canada

Version control using **Git, Command line** programming.
SQL, Python, **R** & Statistics, Advanced **Microsoft Excel.**

Computational Genomics & Bioinformatics course (CSB1472) Winter 2019
University of Toronto, Toronto, Canada A+ grade in graduate level course.

Bioinformatics lab: Biological databases, Sequence Alignment, Motif and profile analysis & Phylogenetics.
Python coding assignment: Single nucleotide polymorphism **(SNP) identification** & annotation from microbial genome **sequence** .**fasta files**

WORK EXPERIENCE

Teaching Assistant September 2018 – April 2019
University of Toronto Mississauga, Canada

Courses: Laboratory in Cell & Molecular Biology (BIO314) & Plant Morphology & Physiology (BIO203).
Facilitated laboratory experiments, prepared Microsoft PowerPoint teaching material, taught interactive tutorials, mentored small-group research, individually instructed 16-24 senior undergraduates.

Math/Chem Instructor & Research Assistant January 2017 – May 2018
Core Medical Centre, Vancouver, Canada

Supported **literature review, editing & writing** of research publications.
Instructed MATH100 & CHEM100 courses in an associated Health Sciences diploma program.

Biological Technician March 2016 – November 2016

StemShock Inc., Vancouver, Canada

Formulated & tested a 'Programmable RNA-interference' herbicide at the **startup company**.

Set up a sterile plant tissue culture facility. Successfully regenerated transgenic tobacco, solid cultures & clones of weeds like Dandelions and Amaranth for herbicide tests.

Received pay raise within 3 months.

EDUCATION

Master of Science (M.Sc.) - Botany September 2012 – August 2015

University of British Columbia, Canada Supervisor: Dr. Carl Douglas

M.SC. THESIS: "*Physiological role of the* KNAT7 *transcription factor in diurnal regulation of lignin biosynthetic genes and resource allocation in Arabidopsis thaliana."*

LABORATORY SKILLS:

Real-Time PCR, Western blots, DNA/RNA/Protein extraction, cDNA synthesis, transgenic Arabidopsis plant genotype & phenotype assessment. Confocal & Fluorescence Microscopy.

Determined own easy method to validate qPCR reference genes; realized it was same as (Vandesompele et. al., 2002).

Helped lab save 5X more funds by testing, encouraging switch from Bio-Rad SYBR Green enzyme to the equally consistent and accurate FroggaBio enzyme mix.

DATA ANALYSIS SKILLS:

Gene and protein expression analysis: **Data standardization, descriptive statistics, t-test/ANOVA, correlation analysis using Microsoft Excel**.

Diurnal gene expression **patterns fitted to sine/cosine waves** to determine periodicity using an **R package.**

Bachelor of Technology – B.Tech. (Biotechnology Engineering) July 2008 – June 2012

National Institute of Technology, Warangal, India GPA: 8.95 / 10.00

Problem solving and Computer programming (in **C++)**, Advanced Engineering Mathematics & Statistics courses.

ACHIEVEMENTS & OTHER

- **Won 'Best Student Talk'** award at the Banff International Conference on Plant Metabolism, 2014. Only M.Sc. student (among PhDs) selected to give a talk. Also, presented a poster at the International Conference on Arabidopsis Research (ICAR), 2014.
- Cleared with **the top 1% rank in the country in the AIEEE (All India Engineering Entrance Exam)** 2008 to secure admission to one of the Indian National Institutes of Technology.
- Encouraged Grade 8-Grade 12 students to consider science careers through workshops like 'Mini-CSI mysteries' & 'Alien Babies – genetics concepts' as volunteer for **Let's Talk Science**. Corresponded with teachers, ensured availability of equipment, provided safe, interesting learning.
- Excelled at the acclaimed **Instructional Skills Workshop (ISW)** provided by UBC's Centre for Teaching and Learning in March, 2013.