**Brian J. Wiley**

107 W. Monument St, Unit GC [bwiley4@jhu.edu](mailto:bwiley4@jhu.edu)

Baltimore, MD 21202 (480) 370 – 4230

Seeking a summer intern position in the field of Computational Biology

Special interest in Proteomics, Computational Medicine, Computational Oncology.

# SKILLS & QUALIFICATIONS:

* JAVA, Python, R (3 years)
* C++, HTML, SAS, Linux Shell Scripting, MySQL, Oracle BI.
* Machine Learning with Python’s Scikit Learn, Jupyter Notebook, Markdown
* Git Bash, Github, Jira Collaboration Platform
* ANOVA, Chi-Square, Linear Regression, McNemar, Pearson Correlation
* SAP CRM, Cloud for Customer Applications, BI reporting systems
* Biology wet lab with manipulating DNA and cellular biology, Biochemistry and Organic Chemistry.
* Ability to work under pressure and in an international environment.

# EDUCATION:

JOHNS HOPKINS UNIVERSITY, Baltimore, MD

**Masters of Science Degree in Bioinformatics:** May 2021 (Expected) **Major GPA:** 3.7

LA SALLE UNIVERSITY, Philadelphia, PA,

# Bachelor of Science Degree in Business Administration: December 2008 Major GPA: 3.0

# Major: Finance/Risk Management:

# Relevant Coursework:

* Java Data Structures – Coded various data structures and assignments in Java using generics, objects, and interfaces including Arrays with duplicate searching, Bags, Doubly Linked, Queues, Stacks, Hashing, Binary Expression Tree with visualizer, B-trees, and Huffman Tree encoding .
* Algorithms for Bioinformatics – Code algorithms from CLRS with Java and Python in sorting, BST, Binary Heaps, Red/Black trees and Red/Black Join algorithm (also used Graphviz library), Elementary graph algorithms – BFS, DFS, Bitonic Tour, SCC Graph, Minimum Spanning Trees & Disjoint Forest. In R and Python coded four string matching algorithms (Naïve, Robin-Karp, Automaton, and KMP)
* Linux Shell Scripting – Conditionals, Loops, Case statements, Arrays and Positional Parameters, Functions, curl, grep, sed, awk/gawk.
* MySQL – Querying databases, Inserting & Updating, Internal Functions, Views, Procedures, Triggers, & Functions.
* Biotechnology DNA Manipulation – Learned all procedures needed from beginning to end to amplify and clone a Gene of Interest from one plasmid into a different plasmid. This included culturing E. coli cells and measuring with spectrophotometer, making cells competent, transformation, Mini and Midi prep of plasmids and vectors from E. coli transformation, PCR of plasmids to amplify Gene of Interest (GOI), restriction digest of GOI from plasmids, plasmid vector purification and phosphatase treatment, gel electrophoresis to test results from PCR and restriction digest, and setting up ligation reactions to ligate GIO into plasmid vector.
* Molecular Biology of the Gene 20 minute presentation of a paper on RecBCD double strand break repair and recombination enzyme complex. Learned about central dogma from a molecular analysis of the gene perspective. Finished our course with transcription regulation and regulator RNAs to transition to Epigenetics course.

**Page 1 of 2**

* Applied Machine Learning – Using Python-based Anaconda Scikit Learn and Java-based Weka to apply machine learning techniques to datasets from open source repositories. Will include lectures and Python programming on Data Features, Data Preprocessing, Model Evaluation, Supervised Learning, Ensemble Learning, Regression, Unsupervised Learning, Reinforcement Learning, Apriori Analysis, Multilayer Artificial Neural Networks, Regularization, TensorFlow, & PyTorch.
* Cell Biology – 1st of two pre-requisites for Cancer Biology lab. Working in wet lab and performing techniques for Bradford Assay with spectrophotometer, Profiling and Western Blot, Kinetic Characterization of Trypsin, Gel Filtration Chromatography, Erythrocyte Permeability, Live or Die Yeast Fluorescent Microscopy, ELISA for Diabetes detection, pGlo Bacterial Transformation, and Protein Labelling.
* Epigenetics Gene Organization and Expression – Study chemical modifications to DNA and nucleosomes and how they affect chromatin structure and influence gene expression., protein and RNA mediated controls, and distinguish between protein cofactors that directly affect chromatin structure and those that serve as readers and adaptors for protein-protein interactions. Performing review on Epigenetic Control of Immunity and Metabolic Signaling to Chromatin.

**COURSE PROJECTS**

* **Biotechnology DNA Manipulation*:***  *FINAL PROJECT:* Amplified EGFP gene from pcDNA3.EGFP plasmid and cloned into pUC19 vector and similarly amplified mK3 gene from pMIG-mK3 plasmid and cloned into pCIP vector. Finished with 20 minute presentation on project.
* **Java Data Structures**: *PROJECT 1:* Implemented a fully functioning version of Doubly Linked List including a high fidelity version of an imbedded iterator which include a remove() function which is typically very hard to do. Additionally, created a writeup of the changes to standard Linked List in textbook written by the teach to be included. *FINAL PROJECT:* Created a fully functional InFix calculator GUI using java.awt and java.swing libraries.
* **Algorithms for Bioinformatics***: TEAM PROJECT 2:* Implemented the Bitonic Tour algorithm in Python as well as the visualization for the tour in Graphviz interface*. INDIVIDUAL PROJECT 3:* Implrement the long common subsequence (LCS) algorithm for DNA, RNA, and Protein sequences. *FINAL PROJECT*: Implement 4 different string matching algorithms in Python and R and create visualizations in R with ggplot2.
* **Epigenetics:** *FINAL PROJECT:* Epigenetics and cancer with respect to aberrant epigenetics events in stem/progenitor cells leading to their clonal expansion rather that normal differentiation. Inspired by papers by Dr. Stephen Baylin and Dr. Andrew Feinberg.

**WEBSITES:** <https://github.com/BJWiley233/Practical-Computer-Concepts-Files>  [https://github.com/BJWiley233](%20https://github.com/BJWiley233)

<https://github.com/BJWiley233/Practical-Computer-Concepts-Files/tree/master/Python/Machine%20Learning>

# EMPLOYMENT:

VARSITY TUTORS, Clayton, MO

# Math & Computer Science Tutor September, 2018 – May, 2019

SUNRUN, Scottsdale, AZ

# Marketing Operations Analyst August, 2017 – May, 2018

JOHNSON CONSULTING GROUP, Scottsdale, AZ

# Accounting Systems Analyst and Support June – August, 2017

SAP AMERICA, INC.,Newtown Square, PA

**Contract Administrator/Q2C Support - Global Cloud Sales Operations** November 2012 - March 2017

**Page 2 of 2**