**IRYNA CHERVACHIDZE**

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[GitHub Page](https://github.com/ichervachidze)

EDUCATION highlights:

2019 - 2021 **Boston University** Master of Science, Software engineering, in progress

WORK EXPERIENCE highlights:

**Boston University**, **Graduate teaching assistant for MET CS 521, Informational Structures with Python, May 2020 – present**

* Graded homework and provided formal feedback to students for their coding assignments
* Provided constant support to students by answering email inquires and giving assistance on course-related topics using Zoom.

VOLUNTEER WORK:

**Boston University/Harvard University, Graduate Research Assistant for Prof. Pinsky and Prof. Klawansky, Sept 2020 – present**

* Designed, implemented and maintained a program in Python to perform random sampling of two populations in order to build confidence (expected) intervals
* Kept track of versions using GitHub
* Participated in weekly research meetings and provided explanations of the programming logic to the participants

TECHNICAL SKILLS:

* **Python 3**, including essentials of Numpy, Pandas, and Matplot libraries
* **Java**, including generics, Abstract classes, concurrent threads, exception handling, inner anonymous classes, streams and lambdas, and JDBC
* **JUnit testing** in Java
* **Unix/Linux CLI (bash scripting)**
* Essential **SQL**, **SQL/PL** using **Oracle’s SQL Developer**
* **SQLLite, Oracle,** Oracle SQL Developer
* **Database design** principles, including ERD/EERD diagramming, associative relationships, bridging entities, specialization/generalization relationship, normalization process, DDL, DML and stored procedures/triggers
* Basic **MATLAB**
* **HTML, CSS**
* Essential **JavaScript**
* **Git** version control
* Conceptual understanding of the following **Machine Learning** algorithms:
  + Linear regression/Ordinary least squares regression
  + Gradient descent optimization
  + Logistic regression
  + Neural networks

PROGRAMMING PROJECTS highlights:

**Web Development (front end)**: Portfolio Website. HTML, CSS, JavaScript, a few instances of Vue.js. Please see <https://ichervachidze.github.io>

**Data Structures and Algorithms Project**: Finding the Shortest Path in the Graph Using Heuristic Algorithms. Design and implementation of a program that finds the shortest path for the given undirected graph, in Java. (Note: this project does not use Dijkstra's shortest path algorithm). This program uses several data structures and relies heavily on OOP principles. Data structures used: Java *arrays*, *ArrayList*, *Stack*, and a custom-created *adjacency list graph*. For more details see [data structures project (ichervachidze.github.io)](https://ichervachidze.github.io/structures_project.html).

**Java Project**: School Supplies Store Simulation. Abstract classes, inheritance, generics, concurrent threads, exception handling, JUnit tests, JDBC with SQL Lite. This project simulates activity of a small school supply store. For more details please see [java project (ichervachidze.github.io)](https://ichervachidze.github.io/java_project.html)

**Python 3 Project**: Listen and Spell Practice Program. The idea of the project is to practice spelling words grouped by a common rule. Implementation includes several classes, assert statements to test instance methods, i/o files with .txt, and user input validation. This program uses a third party library for sound playback easily installed through pip install. For more details please see [python project (ichervachidze.github.io)](https://ichervachidze.github.io/python_3.html)

**Database Design and SQL/PL Project**: Town Youth Soccer Club Database. A database designed for a Town Youth Soccer Club. Database contains 16 entities, 5 of which are in generalization/specialization relationship and the rest are in associative relationships. The design contains bridging entities where necessary to model M:N relationships. The database also has a history table that tracks changes in fees for annual participation and uniforms. SQL implementation includes stored procedures to populate tables as well as a trigger that records changes of fees in the history table once the fee amount changes. The project includes an Oracle SQL script that contains DDL to create and populate tables and three sample queries that feature aggregate functions, joins, and subqueries. For more details please see [database project (ichervachidze.github.io)](https://ichervachidze.github.io/database.html)

**Python 3 Research Project (currently in progress)**: Random sampling simulation for various sampling sizes based on two empirical data sets. Libraires used: NumPy, Pandas, MatplotLib. This program is intended to aid in the development of empirically derived “expected intervals” for ratios and difference of means of two populations.

OTHER TECHNICAL/MISCELLANEOUS SKILLS:

* Unified Modelling Language
* LucidChart
* PyCharm
* Eclipse
* Jupiter Notebooks
* Visual Studio Code
* Russian and Ukrainian languages (native proficiency)