Zhaozhen Liang

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EDUCATION

University of Alberta
Computing Science, BSc Specialization *Expected Graduation: May 2020*

RELEVANT COURSEWORK

Algorithm and Data Structure, Reinforcement Learning, **Discrete Math**, Information Retrieval Probability Theory, **Database Management**, Computer Network, Numerical Method, Software Web Architecture, Linear Algebra

SKILL HIGHLIGHT

Python • C • Bash • **SQL(SQLite3)** • Android • Relational Algebra • MIPS Assembly Design Pattern • HTML5 • CSS • NLTK • Django • Socket Programming • AJAX RESTful API • Javascript

PROJECTS

Distributed Social Network Web Application
A simple social web applications that can link to other social web applications in a distributed fashion

- Built back-end based on Django MVC
- Designed database schema for storing information needed
- Implemented client server communication via AJAX(RESTful API requests) and server to server communication RESTful APIs for exchanging user information from other server

ECHOES
A simple, interactive android app that assists users in forming good habits

- UI design: Interactive Animation Button, Activity Animation Transition, Calendar View, Layout Design, Color theme. UX design: Input Method Editor(IME), Search Edit Text Box, Comment Edit Text Box
- Designed data structure for storing user data

Spatial Data with Edmonton OpenStreetMap

- Parsing 1 million OSM(OpenStreetMap) data efficiently from XML format input file into database as well as creating triggers to keep database consistent
- Querying geographical way distance information efficiently with good precision and in minimum amount of SQL statement
- Speeding up spatial range query (K-Nearest-Neighbour) by building Btree and Rtree(based on their minimum bounding rectangle) indexes(for comparison)

Mini Search Engine Program
Provide keyword query and phrase query over all documents with different ranking algorithms based on the vector space model

- Collecting all documents to be indexed
- Implemented linguistic processing(Tokenization and Lemmatization) on texts in each document by using NLTK library and represent each document as vector over corpus dimensions
- Designed database schema and store all of the indexes into Relational database: SQLite3 efficiently
- Provide efficient search and retrieve the most relevant information according to query

EXPERIENCE

Academic Tutor

- Helping student in Computing Science introduction course to understand some basic knowledge of problem solving and give intuitive explanation on how some of the basic data structure and algorithm works.
- Guiding them to solve problems on their own

T & T Supermarket **Edmonton, AB**

Part Time Cashier *June 2017 til October 2018*

- Managing time for studying while working
- Good service and friendly communicating with customers
- Concentration and accuracy

AWARD

2015	Alexnder Rutherford Scholarship
2014	Certificate of distinction in Waterloo Hypatia math contest
2014	Certificate of distinction in Waterloo Fermat math contest
2013	Certificate of distinction in Waterloo Cayley math contest