Xiaohua Cai

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SKILLS

Languages & Frameworks
HTML/CSS/SASS, JavaScript, Python, Java, Node.js, Express, React, jQuery, Bootstrap, Visual Basic
Systems & Database: MongoDB, PostgreSQL, MySQL, Git/Github, Heroku, Netlify **Software Architecture:** RESTful API, MVC

EDUCATION

Front-End Web Developer NanoDegree from Udacity	December 2020- March 2021
Master of Science in Food Science & Bioresource technology	September 2017- December 2018
University of Alberta	**GPA3.7/4.0**
Bachelor of Science in Food Science and Engineering	September 2013- June 2017
Fujian Agriculture and Forestry University, China	**core courses: GPA3.7/4.0**

·   Studied at University of Albert as a visiting student from 2016 to 2017

Award:
·   Awarded by the Chinese State Scholarship (CSC) program to support students with exceptional academic achievements to study abroad for one academic year. (value: $17,000 CAD).   2016-2017
·   Awarded with third-class excellent academic scholarship. Honored with Outstanding Communist Youth League member. 2016
·   Awarded with second-class excellent academic scholarship. Valued as merit student   2014-2015
·   Awarded with China National Scholarship & first-class excellent academic scholarship. Received a second-prize of debate competition. Valued as merit student   2013-2014

Publication: https://t-stor.teagasc.ie/handle/11019/2039

WORK EXPERIENCE

Research and Development Scientist   January 2019- Present
SBI BioEnergy Inc.
·   Calculated mass balance for 10+ lab-scale reactors through Microsoft Excel Visual Basic Programming
·   Set up, connected and applied software applications to automatically control various chemical reaction process.
·   Acquired data, tabulate and present data to the process and catalyst development team on regular basis
·   Investigated and troubleshooted Hydrogen reaction processes.
·   Develop new analytical methods as required to analyze and access properties of catalyst and biofuel product samples
·   Conduct physical property assessment experiments of solid catalysts, liquid and gaseous biofuel product using various instruments, such as Gas Chromatography, UV Spectrophotometer, Fourier Transformed Infra-Red Spectrometer

Research Assistant   May 2018- November 2018
University of Alberta
·   Synthesized and characterized canola oil amphiphilic block copolymers as nano drug carrier.
·   Analyzed data using Microsoft Excel & plotted images using Adobe Illustrator software & graphed data using GraphPad Prism7
·   Delivered professional presentations and submitted a fifty-page written scientific research paper

Research Assistant   January 2016- July 2016
Agriculture and Forestry University
·   Conducted a scientific research. An author of a published scientific research paper. https://t-stor.teagasc.ie/handle/11019/2039

CODING PROJECTS

Full Stack Chat App   April 2021
Use client-side and server-side WebSockets to create connections and broadcast messages
Front-end: React **Back-end:** Node.js, Express, Socket.io **Deployment:** Netlify, Heroku
Live Page   Repository

Full Stack Library App   May 2021
An MVC pattern based application. Applied MongoDB, NoSQL. Used EJS view engine to render pages, it allows user to add, search, update information.
Front-end: CSS **Back-end:** Node.js, Express, MongoDB, Mongoose, EJS **Deployment:** Heroku
Live Page   Repository

Travel APP
A weather forecasting application. Data retrieved from three APIs: Pixabay API to display an image of the location entered, GeoNames API to retrieve coordinates, WeatherBit API to fetch weather data.
Front-end: HTML CSS **Back-end:** Node.js, Express
Demo   Repository

User Management Systems May 2021
Applied MongoDB to update and delete user information, used EJS view engine to render pages.
Front-end: CSS **Back-end:** Node.js, Express, MongoDB, Mongoose, EJS
 Repository

Github Finder April 2021
This application allows users search Github account profiles and Bios through retrieving data from the Github API.
Front-end: React functional components, Hooks & Context **Deployment**: Netlify
Live Page   **Repository**

Full Stack Feedback App May 2021
Front-end： HTML, CSS **Back-end:** Python Flask, PostgreSQL, maitrap.io
Demo   **Repository**

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Relevant Computer Course Completed	Relevancy	Grade
Fundamentals of Information Technology	Data Structure and Algorithm, Fundamental concepts in CS, Introduction to SQL, Database Systems, Intro to hardware systems and operation system	80/100
Experiment for Information Technology Foundation		98/100
Visual Basic Programming	Visual Basic	78/100

Relevant Mathematics & Statistics Course Completed	Relevancy	Grade
Advanced Mathematics B1	Advanced **calculus** (**Differentiation** & **integration**), Higher order derivatives and relative rates of change, properties of functions by derivative, Finding limits using derivative, Higher-order differential equations	80/100
Advanced Mathematics B2	**Differential calculus**, **integral calculus**, Directional derivatives and **gradient descent**, vector, curves and surfaces	96/100
Probability Theory	Probability, probability distributions for discrete and continuous random variables, Multivariate Probability Distributions, Moment and Covariance Matrix, linear regression	86/100
Linear Algebra	vector spaces, matrix algebra, linear transformation equations, Gram-Schmidt process, QRfactorization of a matrix and least squares, change of basis, similarity and diagonalization, Orthogonal diagonalization, quadratic forms, Applications in a variety of fields, numerical methods	93/100
EDPY 500 Introduction to Data Analysis in Educational Research	Sampling distributions and the central limit theorem, hypothesis test	A

Relevant Online Course Completed	Relevancy	Grade
Managing Big Data with MySQL (through Coursera)	MySQL Relational Databases	pass
Front End Web Developer Nanodegree (Udacity)	HTML, CSS, JavaScript	pass
Front-End Web UI Frameworks and Tools: Bootstrap 4	HTML, CSS, JavaScript, Bootstrap 4	pass