Ben Cheng

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EDUCATION

University of Toronto   Ontario, Canada
Specialist in Computer Science, Major in Statistics (GPA: 3.94)   *Sep. 2021 – June 2026*

PROFESSIONAL EXPERIENCE

Junior Web Developer   Sep 2023 – Present
Centre for Social Services Engineering
- Developed searching functions on backend server with RESTful API using NodeJS and TypeScript
- Implemented the full-search query for GraphDB using Lucene connector and SPARQL query
- Implemented the frontend interface for the searching page
- Leveraged Docker container to deploy and set the NodeJS server
- Implemented tests on searching functions using Jest Test library

Research Assistant Volunteer   May 2023 – Present
Middleware Systems Research Group
- Upgrade and maintain PHP-built website   (May 2023 - Sep 2023)
  * Upgraded the website to a 64-bit system with XAMPP 8.2.4 from a 32-bit system with XAMPP 1.7.4.
  * Enhanced the website security by over 15% through applying the Google 0Auth2 verification package.
  * Embedded LinkedIn and Twitter posts and spaces in the lab webpage.
  * Rewrote the frontend styles using the SASS preprocessor and Material CSS framework.
  * Utilized Google Analytics API to analyze the website dataflow and viewing counts
- Built backend and frontend of modern lab website (Django CMS, Docker, Nginx, Google Scholar, Redis, MySQL, certbot)   (June 2023 - Present)
  * Constructed Django CMS website application wrapped in Docker Container.
  * Designed and implemented Django frontend templates, components and plugins
  * Implemented a CI|CD pipeline utilizing GitHub Actions to automate code integration, testing and deployment process, enhancing the development process
  * Leveraged Google Scholar API to demonstrate publications published by professors

PROJECTS

Student Assessment Prediction | *PyTorch, Numpy, Pandas, Scikit-learn, Scipy*   Nov 2023 – Dec 2023
- Constructed, trained and tested neural network by PyTorch and KNN algorithm
- Implemented an Item-Response-Theory model to predict student correctness on the diagnostic question
- Analyzed and predicted whether a student can correctly answer a specific diagnostic question based on the student's previous answers

CUDA Convolution Image Processing | *CUDA, OpenCV, C++, MSVC, CMake*   Aug 2023 - Sep 2023
- Implemented Grayscaling and Gaussian blurring functions through C++ convolution computing
- Optimized the performance by over 30% through GPU parallel computing in the Nvidia CUDA platform
- Utilized MSVC and CMake to structure, build, test, and package the application

MovieReviewShare | *React, NodeJS, Express, MongoDB, Redux, Tailwind CSS, Azure*   July 2023 – July 2023
- Developed a movie-review platform application using NodeJS, ExpressJS and RESTful API
- Deployed backend and database server on Microsoft Azure and MongoDB Atlas cloud platform
- Constructed tools for authentication and authorization through JWT

SoftStore | *React, Spring Boot, Spring Data JPA, Material UI, TypeScript, Redis*   May 2023 – June 2023
- Developed a full-function purchase/sell platform using Spring Boot, React, Spring JPA and Redis
- Designed, applied and implemented a responsive front-end webpage template adapting mobile devices
- Constructed and developed a set of tools for authorization and authentication based on Sa-token authentication framework

Mini Eventbrite | *JDBC, SQL, Java, Swing UI, Git* Sep 2022 – Dec 2022

- Collaborated with team members developing the application through Git and Github
- Implemented the function for users to publish, edit, sell, purchase and comment on events
- Independently designed and constructed the database connection layer
- Participated in the development of front-end UI design and login/logout use cases

Technical Skills

Languages: Java, Python, C, C++, Cuda, JavaScript, TypeScript, HTML, CSS, PHP, R, Go, Dafny
Backend: NodeJS, Express, Spring Boot, Django, Microsoft Azure, Google Cloud Platform
Frontend: React, Material UI, Tailwind CSS, Redux, Selenium, Beautiful Soup
Database: Spring JPA, MyBatis, MySQL, PostgreSQL, SPARQL, Ontotext GraphDB, MongoDB, Redis
Developer Tools: Git, Docker, Figma, CMake, Makefile, XDebug, MSVC, GCC, MinGW, Vite
Technologies: PyTorch, Numpy, Scikit-learn, Linux (Ubuntu)