

Yunkai Wang

SOFTWARE DEVELOPER · SOFTWARE ENGINEER

Ottawa, ON

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Education

Carleton University

Ottawa, ON

M.C.S. COMPUTER SCIENCE

Jan. 2020 - Current

- Research in Computational Geometry. GPA: 11.4/12. Expected graduation: June 2021.
- **Select courses:** Statistical and Syntactic Pattern Recognition, AI-enabled Software Verification and Testing, Algorithms for Data Science.

B.C.S. COMPUTER SCIENCE

Sep. 2014 - Jun. 2019

- Algorithms Stream with Minor in Mathematics. GPA: 11.67/12.
- **Select courses:** Object-Oriented Software Engineering, Abstract Data Types and Algorithms, Operating Systems, Artificial Intelligence, Neural Networks, Database Management Systems, Real-Time Concurrent Systems, Design and Analysis of Algorithms, Linear Algebra, Calculus.

Skills

Languages Python, Java, C, C++, JavaScript (Node.js, React), SQL, Swift, HTML, Scheme, Prolog, Shell

Platforms AWS, Linux (Ubuntu), Windows, Mac

Technologies Django, Eclipse, Express, Git, Perfect, React Native, Scikit-learn, Tensorflow, Visual Studio Code

Experience

Open Source Integration Developer

Ottawa, ON

BLINDSIDE NETWORK INC.

May. 2018 - Aug. 2018

- Installed and integrated BigBlueButton with open source platforms to manage entire activities at one spot and improve online learning process.
- Implemented BigBlueButton API libraries using both Java and Python for formatting the API requests and parsing the responses.
- Developed a zimlet for Zimbra users to freely use BigBlueButton; extended Zimbra server by adding both HTTP and SOAP request handler for meeting administration and receive callbacks from BigBlueButton server.
- Deployed a XBlock using XBlock SDK for integrating Open Edx with BigBlueButton; supported features including join meeting and BigBlueButton server configuration.

Programmer

Ottawa, ON

CARLETON UNIVERSITY

May. 2017 - Dec. 2017

- Established and launched an automated diagnostic test generation application for elementary arithmetic skills improvement; developed a decoding application for analyzing the test result and reporting user's deficient skills; documented a user manual for the application.
- Implemented multiple code generation methods for generating the best test template.
- Applied web server for computing disjunct matrix based on the given input, along with a monitor for overseeing the healthy status of the server.

Java Developer

Ottawa, ON

ESPIAL GROUP INC.

Sep. 2016 - Dec. 2016

- Collaborated in an Agile team; participated in the full software development life cycle.
- Configured virtual labs on AWS to offer easier access of the MSP platform for global customers and increase the lab availability for other developers and teams; migrated and configured the entire MSP platform on EC2 instances.
- Maintained and upgraded existing containerized applications; executed automated tests for app efficiency enhancement.
- Founded JESB, an internal team management tool for monitoring teams' statistics.

Teaching Assistant

Ottawa, ON

CARLETON UNIVERSITY

Sep. 2015 - Apr. 2021

- Offered operational and administrative support to professors; delivered a range of teaching and assessment activities including tutorials directed towards the successful delivery of subjects; provided effective timely and appropriate feedback to students to support their learning.
- Prepared and lessoned two lectures for the Theory of Computation course.
- Managed nine different undergraduate level courses and supervised over five hundred students.

Research Assistant

Ottawa, ON

CARLETON UNIVERSITY

May. 2020 - Apr. 2021

- Worked under the supervision of Prosenjit Bose and Ahmad Biniyas on uncovering simplified algorithms for piercing disks in the plane.

Projects

Retrieve

Carleton U.

github.com/Jasonjys/retrieve

2017

- **Technologies:** React Native, Express, Node.js, Firebase, EC2 instance, S3 bucket
- A free-to-use lost-and-found mobile app deployed on iOS; supported user registration or log in through Facebook identity provider; permitted users create posts or query posts using keywords or locations.
- Created and applied chat functionality; allowed sending images and locations to other users and stored figures in S3 bucket.
- Constructed a web server on EC2 instance for handling query and chat requests; cached query results in local memory to achieve low latency and increase server availability; automatically generate .

TFTP File Transfer System

Carleton U.

github.com/yunkaiwang/TFTPFileTransferSystem

2018

- **Technologies:** Java, Socket programming
- Implemented a connection-less file transfer system based on the TFTP specialization.
- Supported traditional file manipulation commands used in Linux in the terminal based user interface.

JESB, Jira to ElasticSearch Bridge

Espial

Espial's internal tool

2016

- **Technologies:** Elastic Search, Kibana, Node.js, Quality Automated Test Framework
- Founded an internal team management application for monitoring teams' statistics; designed automated tests for app efficiency enhancement.

Landlord poker game AI

Carleton

<https://github.com/yunkaiwang/DouDiZhuAI>

2019

- **Technologies:** Swift, Perfect, Best-reply Search
- Presented an innovative method of building a game search algorithm based on Best-reply Search for the landlord poker game.
- Constructed an mobile app on iOS that allows users play against AI players powered by the proposed algorithm.
- Launched a web server using Perfect to transfer the computational expensive tasks to the server.

Judging a book by its title

Carleton U.

github.com/yunkaiwang/comp4107/tree/master/project

2018

- **Technologies:** Scikit-learn, Tensorflow, Keras, Numpy, Matplotlib, Python
- Applied convolutional neural networks for categorizing books based on their titles; acquired 66% validation accuracy using pre-trained GloVe embeddings; investigated the limitations of MLP models for NLP-related tasks.

Publications

2021 **Simple Linear Time Algorithms For Piercing Pairwise Intersecting Disks**, A. Biniaz, P. Bose, Y. Wang.

WADS

2018 **A Proposed Method for Designing Diagnostic Mathematics Tests**, K. Cheung, B. Stevens, Y. Wang.

eJMT

Awards

2019 Senate Medal for Outstanding Academic Achievement

Carleton

2019 Deans' Honour List (Also honoured in 2015, 2016 and 2018)

Carleton

2015 Champion in Wuqing Teenager Soccer League

Wuqing District

2014 Entrance Scholarship

Carleton

2014 School Champion in Euclid Mathematics Contest

uWaterloo