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 BigBlutButton; extended Zimbra server by adding both HTTP and SOAP request handler for meeting administration and receive callbacks from BigBlueButton server.
- Deployed an 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 to 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 Biniaz 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 login 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.

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 a mobile app on iOS that allows users to play against AI players powered by the proposed algorithm.
- Launched a web server using Perfect to transfer the computationally 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 honored 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*