Programmes d'enseignement coopératif

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Co-operative education programs

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Curriculum vitae

Resumé

Last Update: May 25, 2020

PERSONAL DATA

Lingfeng Zhang
Apt. 503 170 Lees Avenue
Ottawa (Ontario)
K1S 5G5

Language of correspondence
ENGLISH

Citizenship
International

Employment Equity

Security clearance
No

ACADEMIC DATA

Program of studies: **Master of Computer Science Concentration in Applied Artificial Intelligence (Co-op)**

Year Level: **M**

Work term information

Term	Employer	Overall evaluation
1. 2020, Fall	**Environment and Climate Change Canada (ECCC)**	
2. 2021, Winter		

* a blank field in the - overall evaluation - column means that the evaluation has not yet been submitted by the employer

Lingfeng Zhang

LANGUAGES

Language Name	Speaking Level	Writing Level	Comprehension Level
English	Fluent	Fluent	Fluent
Mandarin	Fluent	Fluent	Fluent

EDUCATION

09/2019 - in progress

Master of Computer Science concentration in Applied Artificial Intelligence (thesis-based)

University of Ottawa, Canada

- Supervisor: Prof. Jochen Lang

09/2015 - 06/2019

Bachelor of Computer Engineering

Tianjin University of Technology, China

- Joint Program with the University of Quebec, Canada.
- Specialization: Computer Science &Technology (Specialized in Information Management).
- Average GPA: 90/100
- Ranking: 2/174.

09/2015 - 06/2019

Bachelor of Applied Computer Science

Université du Québec à Chicoutimi, Canada

- Joint Program with Tianjin University of Technology, China
- Same Specialization, GPA and Ranking as the first degree.

SKILLS

Computer

- **Programming Language:** Python, C, C++, Java, PHP, COBOL, HTML5, CSS3, JavaScript, MATLAB, SQL, R
- **Operating System:** Linux, Mac OS, Windows
- **Software usage:** Jupyter Notebook, Weka, 3Ds MAX, Blender, Adobe Series, Microsoft Series, various IDE, LaTeX
- **Other Skills:** Git, XML, Theory of Project Management, Software Testing, UML design, Cloud Services, Research, Algorithms
- **Framework &Libraries:** TensorFlow, Keras, PyTorch, Django, OpenCV, Android, scikit-learn, NumPy, Pandas, Orange, OpenGL, Spring MVC, Vue.js, Bootstrap, jQuery, WeChat Mini Programs, NLTK, SciPy, ktrain, etc.
- **AI-based Knowledge:** Conventional Machine Learning (supervised, unsupervised), Deep Learning (CNN, RNN, GAN, Graph Neural Networks, etc.), Reinforcement Learning, Computer Vision, Natural Language Processing, Data Mining, Data Visualization, Data Science

Engineering

- Images generation by VAE, GAN, WGAN based on MNIST &CIFAR10 datasets
- Sentiment analysis by RNN and LSTM based on the IMDB dataset
- Image Segmentation based on oxford_iiit_pet dataset by UNET architecture with transfer learning
- Text Entailment and Semantic Relatedness by Stacked Bi-LSTM and BERT
- Amazon Echo 'Alexa' AI Ethical Product Analysis (CSI 5137 Ethics in AI course project)
- Web-based online apartment renting management system &Web design

manually
- Built a virtual environment of a house manually by OpenGL
- Development of Questionnaire Survey System based on the WeChat Mini Program
- Created a short animation by Blender &3Ds MAX
- Renting car system by COBOL

Research Projects

Master's Thesis Research: Medical Image Segmentation to detect brain lesions (in the process)

- **Main Research Contents:** Brain lesions area detection and segmentation, MRI medical images, Semantic segmentation, UNet families &Semi-supervised learning &Transfer learning &Data augmentation with GAN families to tackle the lack of data problem, Graph Neural Networks, the self-attention mechanism in computer vision, etc.

CSI 5387 Data Mining and Concept Learning Course Project: Real Estate Analysis

- **Main Research Contents:**data preprocessing(feature selection, data cleaning, standarization, bins, re-sampling), data visualization, outlier detection(box plot, K-means, DBSCAN), regression models(linear, support vector, decision tree, voting, MLP, etc.), regression metrics(MAE, MSE, R2, MAPE, MSLE, etc.), model selection methods(n-fold cross-validation, information criterion, hyper-parameter path, etc.), bin-based multi-classes classification(SVM, decision tree, Naive Bayes, Adaboost, etc.), imbalanced dataset classification evaluation(precision, recall, confusion matrix, f-score), statistical experiments(Friedman Test, Nemenyi Test).

CSI 5386 Natural Language Processing Course Project: Image Captioning

- **Main Research Contents:**CNN encoders(VGG16,InceptionV3,MobileNet,ResNet) by transfer learning, RNN decoders(stacked LSTM, GRU with attention mechanism), Evaluation Metrics(BLEU,CIDEr,METEOR), Datasets(Flickr8k, COCO), Django Web Application with the best performance model.

CSI 5155 Machine Learning Course Project: H-1B Visa Classification and Machine Learning Model Evaluation

- **Main Research Contents:** Supervised machine learning models (e.g. tree-based, distance-based, rule-based, linear SVM, naïve Bayes, bagging, boosting, hybrid models, etc.), Data Engineering (data argumentation, feature extraction &transformation &selection, resampling, etc.), imbalanced dataset (ROC curve and AUC area, confusion matrix, F-measure, average accuracy, recall, precision, etc.), evaluation methods(Friedman Test, Nemenyi Test, Bonferroni-Dunn Test, etc.), training &testing speed comparison, space consumption comparison, GPU accelerated machine learning library: cuML, outlier detection, one class learning.

CSI 5138 Introduction of Deep Learning and Reinforcement Learning Course Project: An Exploration of Universal Adversarial Perturbation in Deep Learning

- **Main Research Contents:** Methods of generating adversarial examples, methods of defending adversaries, properties of adversaries in the physical world, explored relationships between the universal adversarial perturbation and the dataset complexity &the classifier model complexity, generated non-semantic datasets with various complexity levels.

Bachelor Thesis Project: Intelligent Attendance System Based on Face

Recognition and Wi-Fi Fingerprinting

- **Main Research Contents:** Face recognition, anti-spoofing, Android mobile application, Django web application, Wi-Fi fingerprinting, DBSCAN clustering algorithm, the difference between 2.4GHz &5GHz Wi-Fi RSS in real-world, development of present attendance systems.

WORK EXPERIENCE

2019/06 - 2019/07

Computer Vision Engineering Intern (full-time)
CalmCar Vision System LLC (China)

- Marked objects from complex street view images manually
- Assisted the workflow of an autonomous vehicles company and studied various CNN models

2018/01 - 2018/02

JAVA Software Engineering Intern (full-time)
Client Server International Inc (China)

- Assisted the company software development process and acquired the practical knowledge &skills like Spring MVC, XML
- Developed a solid understanding of JAVA, SQL and HTML

OTHER INFORMATION

Honors

- School-level Freshman's 1st Scholarship of Tianjin University of Technology 2015-2016
- School-level Renmin 1st Scholarship of Tianjin University of Technology 2015-2016
- School-level Renmin 1st Scholarship of Tianjin University of Technology 2016-2017
- Excellent Youth League Member 2016-2017
- 2nd Prize in IET English Speech Competition 2018
- School-level Renmin 2nd Scholarship of Tianjin University of Technology 2017-2018
- 3rd Prize in IET English Speech Competition 2019
- 3rd Prize in Intercultural Communication Competence Test 04/2019
- Excellent Graduate 06/2019
- Excellent Bachelor Thesis 07/2019
- Valedictorian of the Undergraduate Joint Program 07/2019

Personal Websites and Information

GitHub: https://github.com/RichardChangCA
LinkedIn: https://www.linkedin.com/in/lingfeng-rinn-zhang-a7b657184/
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REFERENCES

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Jean-Lou De Carufel
Assistant professor
University of Ottawa

Professor at course CSI 3105 Design and Analysis of Algorithms

613-562-5800x6712
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Lingfeng Zhang

Courses

Code	Title	Term	Grade	Units
		2019, Fall		
CSI3105	DESIGN ANALYSIS ALGORITHMS I		A	3.00
CSI5138	Sel. Topics Theory of Cat. T		A+	3.00
CSI5155	Machine Learning		A+	3.00
CGPA				
		2020, Winter		
COP 100	CO-OP Professional Development			0.00
CSI5137	Selec. Top. Soft. Eng. Cat. E		A+	3.00
CSI5386	NATURAL LANGUAGE PROCESSING		A+	3.00
CSI5387	DATA MINING & CONCEPT LEARNING		A+	3.00
CGPA				

------- End of course list -------

Legend

Grades

10=A+ 9=A 8=A- 7=B+ 6=B 5=C+ 4=C 3=D+ 2=D 1=E 0=F

Symbols

()= Credits not granted	*= Excluded from average	ABS= Absence
ADD= Additional to requirements	AUD= Auditrice/auditor	CR= Credit
CTN= Continuing	DFR= deferred	DNW= See: ABS
DR= Dropped	H= Honours	HP= Out-of-program
EIN= Failure/Incomplete	NC= No credit	NNR= Not available
NS= Unsatisfactory	P= Pass	S= Satisfactory
SCO= Insufficient credits		