

Yiming Xu

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EDUCATION

Master of Science in Computer Science - Big Data Engineering

SEP. 2021 – Present.

Vrije Universiteit Amsterdam & Universiteit van Amsterdam, Amsterdam, Netherlands. **GPA: 7.6/10**

Core Curriculum: Large Scale Data Engineering(8/10), High Performance Computing and Big Data(8.5/10), The Social Web(8/10), Web Data Processing systems(7.5/10), Data Mining Technology(8.5/10)

Data and Artificial Intelligence

Sep. 2020 – Jun. 2021

Institut Polytechnique de Paris, Paris, France.

Core Curriculum: Navigation for autonomous systems, Learning for Robots, Machine and Deep Learning, Reinforcement Learning

Bachelor of Engineering in Computer Science

Sep. 2015 – Jun. 2019

Henan University, Henan, China. **Core GPA: 89.21%**

Core Curriculum: Advanced Mathematics(94%), Probability & Mathematical Statistics(87%), Mathematical Modeling(97%), Discrete Mathematics(93%), Basic Circuit and Electronics(88%), Operating System(86%), C++ Programming(92%)

• **Thesis:** Cross-modal Information Retrieval Model Based on Hard Examples Fine-grained Label Learning (Outstanding Graduate Thesis Award)

SKILLS

- Programming: Python, R, C++, SQL, JavaScript
 - Big Data & Machine Learning: Pyspark, Scikit-learn, NLTK, TensorFlow, Pytorch, Keras
 - Data Science: Data science pipeline (cleansing, wrangling, visualization, modeling, interpretation), Statistics, Time series
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WORK EXPERIENCE

Research Assistance - Cross-modal Information Retrieval

Aug. 2018 – Feb. 2020

Institute of Information Engineering, Chinese Academy of Sciences

Beijing, China

- Design a siamese network to learn fine-grained labels for both the positive and negative examples to capture the degrees of hardness, thus enhancing cross-modal correlation learning.
- Introduced these labels to a rank-based pairwise similarity loss function.
- Achieved significant improvements on the retrieval performance by incorporating with fine-grained labels.

Research Assistance

Dec. 2017 – Jan. 2018

Data Analysis Technology Lab, Henan University

Henan, China

- Used Tensorflow trained Convolutional Neural Networks for face classification in ROS. Run the program in Raspberry Pi to achieve portability and flexibility.
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PROJECT EXPERIENCE

Generate Images from Speech Descriptions

Jul. 2022 – Sep. 2022s

GAN, ViT, ESResNeXt, PyTorch Lightning

- Build a Multimodal Attention model to train a image and speech embedding network for feature extraction. Then use a Densely-stacked Generator to generate images from speech features.
- Applying the model on the CUB, Oxford-102 and CelebAMask-HQ datasets produces images of higher quality than the results of the current state-of-the-art model.

U.S. Patent Phrase to Phrase Matching [\[Code\]](#) [\[Report\]](#)

May. 2022 – Jun. 2022s

Bert, Pytorch, WandB

- Build a model ensemble DeBERTa, RoBERTa, and bert-for-patents is designed to predict the degree of similarity between two patent phrases in specific application scenarios.
- Position 47 out of 1,975 teams, Silver Award on the [public leaderboard](#).

Personalize Expedia Hotel Searches [\[Code\]](#) [\[Report\]](#)

Apr. 2022 – May. 2022

LambdaMART

- Build ranked hotel recommendations for users that are searching for a hotel to book using LambdaMART with LightGBM.

European Passenger and Cargo Aircraft Analysis [\[Display\]](#)

Sep. 2021 – Oct. 2021

Pyspark, Scala, Scikit-learn, JavaScript, HTML, D3.js

- Use scala to build a pipeline on Databricks, extract the flight trajectories of passenger and cargo planes from 800G OpenSky data.
- Analyze and visualize the differences between passenger and cargo planes in speed, route, altitude, and time by using random forest.

Video Events Search System [\[Code\]](#) [\[Report\]](#)

Jul. 2019 – Oct. 2019

Tensorflow, Whoosh, HTML

- Sampled frames from each video, every few seconds and generates natural language captions for each frame using DenseCap.
 - Indexed these captions as documents along with the corresponding video URL and timestamp.
 - Retrieved the caption that best matches the user's search query, along with the video and the precise timestamp, within the video associated with the caption.
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PUBLICATIONS

Yiming Xu, Jing Yu, Yue Hu, Jingjing Guo, Jianlong Tan, “*Fine-Grained Label Learning via Siamese Network for Cross-modal Information Retrieval*,” International Conference of Computational Science. Springer, Cham, 2019: 304-317.