

# XUEQING WU

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## EDUCATION

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**University of Science and Technology of China**

Sep. 2016 - Jun. 2020

BS in Electronic Engineering & Information Science

Member of Honors Program in Computer and Information Science and Technology

Member of Honors Program in AI

GPA: 4.06/4.30 (Ranking: 1/363)

## PUBLICATIONS

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Yunsheng Bai\*, Derek Xu\*, Ken Gu, **Xueqing Wu**, Agustin Marinovic, Christopher Ro, Yizhou Sun, Wei Wang, *GNN-MCS: Neural Network Based Maximum Common Subgraph Detection*, Association for the Advancement of Artificial Intelligence (**AAAI 2020**), Under Review, 2019.

Yunsheng Bai\*, Derek Xu\*, Ken Gu, **Xueqing Wu**, Agustin Marinovic, Christopher Ro, Yizhou Sun, Wei Wang, *Neural Maximum Common Subgraph Detection with Guided Subgraph Extraction*, International Conference on Learning Representations (**ICLR 2020**), Under Review, 2019.

Yixing Zhu, **Xueqing Wu**, Jun Du, *Adaptive Period Embedding for Representing Oriented Objects in Aerial Images*, IEEE Transactions on Geoscience and Remote Sensing, Under Review, 2019. [arxiv](#)

## RESEARCH EXPERIENCE

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**Improving BERT-based Language Understanding**

Oct. 2019 - Present

*Research Intern*

*Machine Learning Group, Microsoft Research Asia*

- Use the encoder of Transformer-based NMT model to generate contextualized word embeddings and improve the accuracy of BERT by 1.1% on SST-2 and 1.5% on RTE
- Apply dual-inference framework with BERT and conditional language models to sentence classification

**Long Document Modeling**

Aug. 2019 - Sep. 2019

*Research Intern*

*ScAi Lab, UCLA*

- Proposed sparsified Transformer to decrease memory consumption and model long documents
- Designed a semantic-aware pooling module to increase the receptive field and attained competitive results on IMDB dataset

**Chinese Handwritten Textline Recognition**

Mar. 2019 - Sep. 2019

*Research Intern*

*NEL-SLIP, USTC*

- Compared DNN-HMM, CTC and encoder-decoder models via extensive experiments
- Featured a data augmentation method that utilized images of isolated words and a large Chinese corpus to construct textline images
- Improved the CTC architecture and increased the accuracy from 80.1% to 87.3%

**Oriented Object Detection in Aerial Images**

Mar. 2019 - Jun. 2019

*Research Intern*

*Challenge-2019 on Object Detection in Aerial Images, CVPR*

- Improved the representation of oriented objects based on the periodicity of tilt angle
- Proposed Length Independent IoU (LIIoU) to increase the recall for long objects
- Won the 1st place in oriented object detection task and the 2nd place in horizontal object detection task, and produced a paper currently under review

## PROJECT EXPERIENCE

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### **Qibing Robot (awarded First Prize)**

Apr. 2018 - Oct. 2018

*Major Programmer and Electronic Designer*

*Robogame (Robot Design Competition by USTC)*

- Identified the color of objects to decide the moving strategy using OpenCV on Raspberry Pi
- Implemented PID control algorithm on STM32 to guarantee stable and high-speed movement
- Employed UART devices for efficient and reliable communication between the Raspberry Pi and STM32

### **Biohub 2.0 (awarded Gold Medal)**

Dec. 2016 - Nov. 2017

*Backend Programmer International Genetically Engineered Machine Competition (Software Track)*

- Built a user-friendly, intelligent BioBrick search engine with a well-designed mathematical model for results ranking
- Constructed a high-quality BioBrick scoring system and a pertinent forum to promote idea sharing
- Developed a plugin system and released a BioBrick recommender plugin to facilitate biological research

## COMPETITIONS

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**First Place**, Task 1, Challenge-2019 on Object Detection in Aerial Images Apr. 2019

**Second Place**, Task 2, Challenge-2019 on Object Detection in Aerial Images Apr. 2019

**Meritorious Winner**, MCM / ICM Jan. 2019

**First Prize**, Robogame, USTC Nov. 2018

**Second Prize**, Anhui Province, National Undergraduate Electronic Design Contest Jun. 2018

**Third Prize**, USTC Electronic Design Contest Jan. 2018

**Medal Prize**, Software Track, International Genetically Engineered Machine Competition Nov. 2017

## SCHOLARSHIPS & HONORS

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**Honorary Rank** (Top 5%), USTC Nov. 2019

**Guo Moruo Scholarship** (Highest honor at USTC, top 1%), USTC Oct. 2019

**Tang Lixin Scholarship**, Tang Lixin Education Development Foundation Oct. 2018

**National Scholarship**, China Oct. 2018

**Outstanding Student Scholarship**, USTC Oct. 2017 & Oct. 2016

## SKILLS

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**Languages** Python, MatLab, C++, Java, LaTeX

**Deep Learning Tools** PyTorch, PyTorch Geometric, PyTorch Transformers, Tensorflow

**Software** Visual Studio C++, PyCharm

## PROFESSIONAL EXPERIENCE

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**Research Intern**, Machine Learning Group, Microsoft Research of Asia Oct. 2019 - Present

**Research Intern**, ScAi Lab, UCLA Jul. 2019 – Sep. 2019

**Teaching Assistant**, Electronic Design Practice I Course, USTC Feb. 2019 - Jun. 2019

## EXTRACURRICULAR ACTIVITIES

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**Vice Director**, College Debate Team, USTC Sep. 2017 - Present

**First Prize**, USTC Debate Competition Nov. 2016

**Class Commissary in Charge of Psychology**, USTC Sep. 2016 - Sep 2017