

EDUCATION

- **University of Science and Technology of China (USTC)** Sept. 2016 - Present
B.S. in Computer Science *Hefei, Anhui, China*
 - Member of Hua Xia Talent Program in Computer Science and Technology
 - **Overall GPA:** 3.67/4.30 ◦ **Major GPA:** 3.74/4.30 ◦ **Weighted Average:** 87.51/100
- **University of California, Santa Barbara (UCSB)** July 2019 - Sept. 2019
Research Intern in Computer Science *Goleta, CA, USA*
 - Worked with Prof. Yufei Ding on graph neural network and video stream processing research projects.
- **Peking University (PKU)** July 2018
Exchange student in Computer Science *Beijing, China*
 - Attended 2018 AEARU (Association of East Asian Research Universities) Summer Campus activities.
 - Attended Deep Learning lectures given by Prof. Jian Tang and Big Data Management lectures about Modern Graph Database given by Prof. Leonid Libkin, and gave presentations about research reading.
- **Shanghai Jiao Tong University (SJTU)** Feb. 2018 - Jun. 2018
Exchange student in Computer Science *Shanghai, China*
 - Attended Computer Network Course given by Prof. Yanmin Zhu and Built a virtual SDN network based on mininet virtual machines and tested execution performance details of several Internet protocols.
 - Attended Big Data Analysis Course given by Prof. Weinan Zhang and Took part in Kaggle Competitions of Text Classification about ML algorithms and Link Prediction about graph embedding algorithms.

RESEARCH EXPERIENCE

- **Motion-Vector Based Video Object Detection** July 2019 - Sept. 2019
Advisor: Prof. Yufei Ding *Goleta, CA, USA*
 - Utilized motion-vector information to accelerate video object detection as part of a MxNet-architecture compiler framework project for deep video stream processing like MSRA-DFF.
 - Improved the quality of motion vector information in compressed domain at feature map level to get a faster but slightly lower accuracy performance on ILSVRC2015 video object detection task.
 - Built a more complicated MV-Net to improve the quality of motion vector used at feature map level, rather than just scale the motion vector by 1×1 convolutional layer, results $\text{MAP@5} = 0.6225$.
 - Used DMC-Net like structure to fine-tune the motion vector, in order to gain more motion information from residual data under optical flow guidance, results without optical flow guidance: $\text{MAP@5} = 0.5091$.
 - Tested different steps of Motion Vector Output Flow Model to approximate the result of DFF and accelerate it, trying to analyze motion vector aggregation-propagation performance at output level.
- **Graph Neural Networks Models Survey** July 2019 - Sept. 2019
Advisor: Prof. Yufei Ding *Goleta, CA, USA*
 - Surveyed GNNs models such as GCN, understood inspiration from CNNs to compute convolution in non-euclidean domain and evolution from spectral models to propagation-convolution models.
 - Read and Profiled general GNNs model – Message Passing Neural Network (MPNN) code.
 - Visualized pooling effect of TopKPooling and SAGPooling algorithms in embedding domain.
 - Surveyed applications of GNNs models like Gdy-Net and massive parallelized device acceleration for GNNs.
- **High quality dataset generation** Dec. 2018 – Mar. 2019
Advisor: Prof. Lan Zhang *Hefei, Anhui, China*
 - Generated high-quality datasets based on existing data quality assessment algorithms.
 - Created diverse and consistent datasets to improve training performance the model.
 - Formalized add and delete operations for a given data set at a lower cost to improve the quality of the set.
 - Sampled a high quality data set from multiple datasets as model training needed.
 - Generated image datasets by Generative Adversarial Network (GAN) which can be used to train the model.

- **Research on Small Scale Object Detection Based on Deep Neural Network** Dec. 2018 – May 2019
Advisor: Prof. Naijie Gu Hefei, Anhui, China
 - Proposed an innovative DNNs model and a modified Faster R-CNN Model for object detection task in the objects shadowing and small object size context such as optical remote sensing images.
 - Implemented methods to position small-scale targets in images based on Faster R-CNN:
 - Quantified the anchor scale in Faster R-CNN to detect partial objects and small scale objects.
 - Optimized model performance with various training parameters, biased fine-tuning and strategy choices
 - Tested following auxiliary measures to find small area proposal based on picture color features:
 - Area similarity calculation based on color features with the help of computer graphic theory.
 - Small target candidate area generation with co-training proposal network assistance.
 - Computed multi-scale feature fusion and context information fusion based on convolutional neural networks.

PROJECTS EXPERIENCE

- **Artificial Intelligence Gomoku Gamer (Supervisor: Prof. Linli Xu):** *Apr. 2019, Hefei*
 - Implemented gomoku gamer with $\alpha - \beta$ pruning algorithm in typical game theory manner for intelligence.
 - Optimized gamer via gomoku manual encoding, OpenMP parallel computation accelerating, optimized pruning order and other design methodologies based on online competition performance against human gamers.
 - Presented with GUI and achieved human-level response time, high-level strategy performance and positive win-rate.
- **Bank Database Manage Application (Supervisor: Prof. Peiquan Jin):** *June 2019, Hefei*
 - Implemented a full stack web-database bank database management application system.
 - Utilized Vue.js to implement web front-end user interface, security check and statistical plotting.
 - Deployed Flask to implement back-end service, including query routing, database interface operating and some application-specific numerical constrain implementing. Applied Origin 18.3 as database management system.
 - Built a user requirement fulfilled database scheme design, user friendly interface and robust service supporting.
- **DBWorld Search Engine (Supervisor: Prof. Peiquan Jin):** *Jan. 2019, Hefei*
 - Built a web search engine for DBWorld website with a tomcat server in response to JSP query.
 - Implemented support to different types of query about DBWorld conferences' location, due time and so on.
 - Programmed entity recognition algorithm to improve recall of retrieve results and regular refreshment of indexes.
- **Erdős co-author Network Mining (Supervisor: Prof. Linli Xu):** *Jan. 2019, Hefei*
 - Implemented influential analysis algorithms to find important authors, i.e. influential nodes, in co-author graph.
 - Utilized spectral clustering algorithms to analyze community structure in Erdős co-author network.
- **Kaggle Competition of Link Prediction (Supervisor: Prof. Weinan Zhang):** *June 2018, Shanghai*
 - Utilized heuristic graph embedding algorithms such as TransE to predict potential links in an academic network.
 - Implemented Network Representation Learning (NRL) algorithms such as node2vec and DeepWalk to get node embedding and collaborative filtering to determine potential links in similar graph structure.

SELECTED AWARDS

- **National Scholarship (Top 5% in one academic year)** 2018
- **Scholarship in The Talent Program in Computer & Information Science** 2016, 2018
- **USTC's 60th Anniversary Celebration Activity Collection Contest Winner** 2018
- **Excellent Social Investigator** 2018
- **Outstanding Student Scholarship** 2016, 2017

SELECTED EXTRA-CURRICULAR ACTIVITIES

- **College Student Association Member & Department Leader** Oct. 2016 – May 2018
Organized students activities and in charge of outreach and equity work of College Student Association.
- **Class Psychology Committee** Sept. 2016 – Dec. 2018
Organized class activities and in charge of students peer psychology health assistance.

SKILLS

- **Programming Languages:** Python, C/C++, Java, MATLAB, Verilog, HTML-CSS-JavaScript
- **Technologies :** L^AT_EX, Git, Vue.js, Flask, MapReduce, Hadoop, CUDA, SQL/PLSQL(Origin), Microsoft Office
- **Deep Learning Platforms:** TensorFlow, Keras, Pytorch, MxNet
- **Languages:** Chinese: Native Language, **English:** Fluent