Xiaohan Zou

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Education

Sept 2016 – Jul 2020 **Tongji University**, Shanghai, China.
B.Eng. in Software Engineering
GPA: 3.5/4.0

Research Experiences

Apr 2020 – Jun 2020 **Food Image Aesthietic Captioning**, Tongji University
Advisor: Qinpei Zhao .
Working on generating critiques related to art and aesthetics for food images. **Our work has been submitted to ICTAI.**
○ Proposed a novel compositional framework consisting of a single-attribute captioning module and an unsupervised text summarization module for generating comprehensive aesthetic captions for food images.
○ Introduced a dataset containing food images with their captions of up to 6 aesthetic attributes for this task.
○ Experiments on the proposed dataset showed that our method outperforms baselines and existed methods substantially in terms of diversity, novelty and coherence.

Sept 2018 – Jan 2019 **Fault Diagnosis for Microservice Architectures**, Tongji University
Advisor: Qingfeng Du .
Worked on building fault diagnosis system for microservice architectures. Our work was supported by Huawei.
○ Represented the services of a cloud platform and the causal relationships between them by a causal graph against the observed performance metrics dynamically using PC algorithm.
○ Identified the culprit services when an anomaly occurs using a heuristic investigation algorithm based on random walk.
○ Fault injection experiments showed that our method achieves higher identification accuracy and speed when compared to traditional approaches, without any expert knowledge.

Jul 2018 – Aug 2018 **Semi-Supervised Machine Translation**, Peking University
Advisor: Tong Lin .
Worked on semi-supervised machine translation using structure duality.
○ Proposed a dual learning framework based on shared hidden space which can utilize the structure duality to boost the learning of two dual tasks and better regularize the model.
○ Designed two denoising auto-encoders consisting of encoders and decoders of two traditional Seq2Seq neural machine translators to make use of unpaired data.
○ Our method outperformed strong baselines by 1.0 - 2.9 BLEU on IWSLT'15 (English-Vietnamese) and WMT'14 (English-German). The improvement was more obvious when labeled data is little.

Selected Projects

Apr 2019 – Jun 2019 **Speech Emotion Recognition**.
Tried various features extracting methods and implemented several models for speech emotion recognition. Our models achieved competitive performance on four benchmark datasets (CASIA (Chinese), EMODB (German), SAVEE (English), and RAVDESS (English)).

Jan 2019 – Mar 2019	**Password Security Assessment**. Collected and cleaned leaked password data and trained several model for password security assessment. Password guessing attack experiments showed the reliability of our models. We then applied our models to improve the password assessment mechanism of an open source Android ethereum wallet.
Oct 2018 – Nov 2018	**Chatbot**. Built a chatbot which can identify and analyze the intentions of users and provide stock and weather information using RasaNLU. The intention classifier and named entity recognizer were based on SVM and implemented by spaCy and scikit-learn. We implemented multi-turn dialogue using finite state automaton. We then integrated the chatbot to WeChat and QQ for a better user interface.

Professional Experience

Oct 2019 – May 2020	**Game Engineer Intern**, Banana Interactive. Banana Interactive is a startup game company focusing on online social games. ○ Involved in developments and major updates of several games. My work included bug fixing, gameplay optimizing, developing in-app purchase function, etc. ○ Developed a game packaging tool for Linux and MacOS.

Publications and Submitted Manuscripts

Jun 2020	**To be an Artist: Automatic Generation on Food Image Aesthetic Captioning** **Xiaohan Zou**, Cheng Lin, Yinjia Zhang, and Qinpei Zhao The 32th International Conference on Tools with Artificial Intelligence (ICTAI 2020), submitted

Selected Awards and Honors

2018	**Bronze Medal**, China Collegiate Programming Contest (CCPC) China Computer Federation (CCF) .
2018	**Finalist**, ACM International Collegiate Programming Contest (ICPC) - Asia Regional Association for Computing Machinery (ACM) .
2017, 2018	**Second Prize**, Programming Contest Tongji University .
2017, 2018	**Second Prize**, China Mathematical Contest in Modeling (CUMCM) .
2017	**Second Prize**, Programming Contest East China Normal University .

Leadership and Activities

Vice Chief Technology Officer & Chief Experience Officer,
<div align="right">Microsoft Student Club (MSC), Tongji University .</div>
○ Responsible for the management of related affairs of the club.
○ Gave lectures about data structure and algorithms, as well as their applications in machine learning on technology courses.

Undergraduate Assistant, <div align="right">XLab, Tongji University .</div>

Skills

Programming Languages: Python, JavaScript, HTML/CSS, C/C++, Java, MATLAB

Tools and Frameworks: Git, PyTorch, Keras, Linux, Vue, Django, LaTeX

Languages: Chinese (native), English (proficient, TOFFEL: 106, GRE: 322)