Hangyu Liu hangyuliu96@gmail.com · 086-18080538188

EDUCATION

Northeast Electric Power University Jilin, China
M.S. Computer Science *09/2019 - Present*
GPA: 3.58/4.0

Southwest University of Science and Technology Mianyang, China
B.S. Software Engineering *09/2015 - 06/2019*
GPA: 3.23/4.0

INTERESTS

Natural Language Processing, Information Retrieval, Semantic Parsing, Sentiment Analysis, Signal Processing, Pattern Recognition, Feature Generation, Data Mining, Quantum Cognition, Affective Computing, Social Computing

RESEARCH EXPERIENCES

Public Opinion Analysis during COVID-19 on Social Media *08/2021 – Present*
Project Member

- Preprocessing data including tokenizing (N-gram), normalizing, POS tagging, named entity recognition, denoising and word embedding.
- Classifying event-based NER taxonomy based on cluster analysis. (undergoing)
- Evaluating groups' response based on fine-grained emotional lexicon. (undergoing)

Fine-tuning Pre-Trained Model on Text Readability Task *06/2021 - 08/2021*
Project Member

- Preprocessing data including standard NLP procedures and data augmentation.
- Fine-tuning and fusing pre-trained language models RoBERTa and XLNet for downstream task.

Question Answering System on a Domain-Specific Corpus *02/2021 - 05/2021*
Project Member

- Fine-tuning pre-trained language model BERT for QA task with information retrieval technique.
- Ranking outputs from pre-trained model and named entity recognition approach.

Fine-Grained Emotional Recognition on EEG Brain Signals *04/2020 - 02/2021*
Supported by the Science and Technology Development Plan of Jilin Province, China (No.20200403039SF).
Project Leader

- Preprocessing EEG signals including wavelet transform, signal segmentation, and denoising.
- Designing formulas of emotional quantification based on emotional similarity (lexicon-based and questionnaire-based)
- Generating features based on pattern recognition of preprocessed EEG signals.
- Proposing EMER model with outstanding performance on emotional recognition task.
- Writing original draft, review and editing.

Quantifying Emotional Expression on Social Media *02/2020 - 06/2020*
Supported by the National Natural Science Foundation of China (No.61701104)

Project Leader

- Extracting features based on the emotional lexicon.
- Designing quantification formulas based on quantity and quality of emotions.
- Quantifying emotional expression of different groups of people on social media.
- Writing original draft, review and editing.

Sentiment Analysis of Mental Health on Social Platform *10/2019 - 02/2020*

Supported by the National Natural Science Foundation of China (No.61701104)

Project Leader

- Preprocessing text data including tokenizing (N-gram), normalizing, denoising, feature extraction and word embedding.
- Generating fine-grained emotional lexicon with 21 representative emotions based on cluster analysis and data fusion.
- Generating features based on lexicon and pattern recognition of emotional sequences.
- Proposing MDI model with efficient performance on evaluating mental health.
- Writing original draft, review and editing.

PUBLICATIONS

1. Multidimensional Emotion Recognition Based on Semantic Analysis of Biomedical EEG Signal for Knowledge Discovery in Psychological Healthcare. Ling Wang, **Hangyu Liu**, Tiehua Zhou, Wenlong Liang, and Minglei Shan. In Applied Sciences, 2021
2. Emotional Expression Analysis Based on Fine-Grained Emotion Quantification Model Via Social Media. Ling Wang, **Hangyu Liu**, Wenlong Liang, and Tiehua Zhou. In Intelligent Information Hiding and Multimedia Signal Processing in conjunction with Frontiers of Information Technology, Applications and Tools (IIHMSP/FITAT), 2021
3. Wavelet-Based Emotion Recognition Using Single Channel EEG Device. Tiehua Zhou, Wenlong Liang, **Hangyu Liu**, Ling Wang. In International Conference on Intelligent Computing (*ICIC*), 2020
4. A Sequential Emotion Approach for Diagnosing Mental Disorder on Social Media. Ling Wang, **Hangyu Liu**, Tiehua Zhou. In Applied Sciences, 2020

PATENTS

1. An Emotion Recognition System based on EEG Signal. Ling Wang, Tiehua Zhou, and **Hangyu Liu**. CN202011462452.3. 2020 (under publication)
2. A Mental Health Evaluation System based on Sequential Emotion Approach. Ling Wang, Tiehua Zhou, and **Hangyu Liu**. CN202010044403.1. 2020 (under substantive examination)

AWARDS

- National Scholarship for Postgraduates 2020