Yun-Wei Chu

No. 128, Section 2, Academia Rd, Taipei City, Taiwan
(+886)911113177 | yunwei.m@gmail.com | https://yunwei-c.github.io/ |

Research Interests

My research interests span machine learning and deep learning method including but not limited to Natural Language Processing, Computer Vision, and Recommendation System.

Education

National Chiao Tung University   Hsinchu, Taiwan
M.S. in Electrical & Control Engineering   *Sep 2015 - Nov 2017*

National Chi Nan University   Nantou, Taiwan
B.S. in Electrical Engineering   *Sep 2011 - Jun 2015*

Research & Teaching Experience

Natural Language Processing and Sentiment Analysis Lab, Academia Sinica   Taipei, Taiwan
Research Assistant, supervised by Dr. Lun-Wei Ku   *Apr 2019 - Present*

- **Visual Storytelling**
  - Implemented knowledge graphs to enrich the story content and planned a story plot before generating stories to increase coherence; Integrated Transformer with designed discriminator which aligns human judgement to refine visual stories.
  - Designed a length-controlled Transformer to generate prolonged visual stories with better focus and detail.
  - Assisted on developing a website in Amazon Mechanical Turk for human evaluations on story quality.
- **Video Dialogue Question Answering**
  - Developed multi-step joint-modality attention network based on recurrent neural network to reason better on dynamic scenes.
- **Multiview Items Recommendation**
  - Designed a GNN-based user-oriented module that aggregate features to make personalized recommendations.

Chaotic Systems and Signal Processing Lab, National Chiao Tung University   Hsinchu, Taiwan
Research Assistant, supervised by Prof. Bing-Fei Wu   *Sep 2015 - Nov 2017*

- **Personalized Image-based Heart Rate Detection**
  - Developed an Adaptive Neural Network Model Selection algorithm to dynamically select personalized model and eliminate facial luminance variation noise from rPPG signal.
  - Drafted a grant proposal, including both research proposal and budget planning, and won NTD 20 million of venture capital from Ministry of Science and Technology.

Institute of Electrical and Control Engineering, National Chiao Tung University

Teaching Assistant - Digital Signal Processing (IEC5202)   *Feb 2016 - Sep 2016*
Teaching Assistant - Student Service Education (UEE1001)   *Sep 2016 - Feb 2017*

Publications

Journal Papers

[1] **Neural Network Based Luminance Variation Resistant Remote-Photoplethysmography for Driver's Heart Rate Monitoring.** B.-F. Wu, **Y.-W. Chu**, P.-W. Haung, M.-L. Chung. *IEEE Access*, 2019.

Conference Papers

[2] **Multi-step Joint-Modality Attention Network for Audio Visual Scene-Aware Dialog System. Y.-W. Chu**, K.-Y. Lin, C.-C. Hsu, L.-W. Ku. *AAAI workshop on Dialog System Technology Challenge*, 2020.

[3] **MVIN: Learning multi-view items for recommendation.** C.-Y. Tai, M.-R. Wu, **Y.-W. Chu**, S.-Y. Chu, L.-W. Ku. *International ACM SIGIR Conference*, 2020.

[4] **A Motion Robust Remote-PPG Approach to Driver's Health State Monitoring.** B.-F. Wu, **Y.-W. Chu**, P.-W. Haung, M.-L. Chung. *ACCV workshop on Computer Vision Technologies for Smart Vehicle*, 2016.

[5] **Applied kNN and SVM classification in image-based Photoplethysmography.** B.-F. Wu, **Y.-W. Chu**, P.-W. Haung, M.-L. Chung *MATLAB and Simulink conference*, 2016.

Patents

Non-contact Heartbeat Rate Measurement Apparatus. B.-F. Wu, M.-L. Chung, T.-Y. Tsou, Y.-W. Chu. *Taiwan Patent #I667635*, Issued Aug 2019.

Monitoring System and Monitoring Method for Infant. B.-F. Wu, M.-L. Chung, T.-Y. Tsou, Y.-W. Chu. *Taiwan Patent #I658815*, Issued May 2019.

Awards & Honors

Special Award of MediaTek IoT Competition, Industrial Development Bureau, Taiwan	*2016*
Outstanding Team Award of NCTU Talentrepreneur Innovation Competition, NCTU, Taiwan	*2016*
3rd place of TIC100 Talentrepreneur Innovation Competition, Advantech Inc., Taiwan	*2016*

Academic Service

Peer Reviewer

International Conference on Computational Linguistics (COLING)	*2020*
The Annual Meeting of the Association for Computational Linguistics (ACL)	*2020*
The International Workshop on Natural Language Processing for Social Media (SocialNLP)	*2020*
The Annual Conference on Innovative Applications of Artificial Intelligence (IAAI)	*2020-2021*
IEEE ACCESS	*2019*

Technical Skills

Programming Languages: Python, C/C++, Matlab
Machine Learning Toolkits:: PyTorch, Tensorflow, Scikit-learn, NLTK
Machine Learning Techniques:: Natural Language Processing, Multi-modal Processing, Graphical Theory, Deep Reinforcement Learning
Languages: Mandarin (native), English (professional working proficiency)

CV last updated: October 15, 2020