

# Sean Chen

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## SUMMARY

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- Skilled in deep learning, natural language processing and recommendation system
- Experiences in cleaning, visualising, modelling real-world data.

## TECHNICAL SKILLS

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**Programming Languages:** Python, C#, JAVA, SQL, PHP

**Data Wrangling:** MariaDB, SQL, Pandas

**Machine Learning:** PyTorch, Scikit-Learn, Gensim

**Others:** Linux, Windows, Git, AWS, Matplotlib for data visualization

## ACADEMIC PROJECT

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### Master Thesis

*Aug 2019 ~ Jun 2020*

*Explainable Recommendation System for Solving Review Loss*

- Proposed a review-base recommendation system named **HANN-Plus**, a multi-tasking neural network to model user's preference and item's preference
- HANN-Plus not only provides explanation for user rating, but also used to fill the lost reviews for further improving the prediction
- Extensive experiments on real-world datasets of Amazon illustrate that HANN-Plus outperforms the state-of-the-art rating prediction methods

### Torrance Tests of Creative Thinking (TTCT)

*Sep 2018 ~ Jun 2019*

- Built an android application for TTCT (*Thinking App*), a test of creativity, originally involved simple tests of divergent thinking and other problem-solving skills
- Host MariaDB server to query and update user data daily
- Implemented **machine learning** for scoring of TTCT: fastText word embedding to initialize user's data, k nearest neighbors to calculate the similarity between user's data and [ConceptNet](#) from [Academia Sinica](#), and statistical methods to accumulate user scores

### Navigation System with Multiple Feature

*Sep 2016 ~ Jun 2018*

- Proposed a path planning algorithm extended from **A-star algorithm** with real-time traffic and turning costs
- Host SQL server to query and update road speed data, crawling from Kaohsiung City Government every 5 minute
- User interface design by implementing Open Street Map API and Google Map API

## EDUCATION

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### National Taiwan Normal University

*Sep 2018 ~ July 2020*

Master of Science in Computer science and Information Engineering

### National Kaohsiung University of Applied Sciences

*Sep 2014 ~ Jun 2018*

Bachelor of Science in Computer science and Information Engineering

- Experiences in developing neural network to model user-item interaction
- ~~HANN-Plus achieves an improvement in rating prediction compared to several state-of-the-art approaches~~
- We used a variety of machine-learning methods to design the scoring mechanism of Thinking (工研院 data, 變異性)

## Master Thesis

*Aug 2019 ~ Jun 2020*

### *Explainable Recommendation System for Solving Review Loss*

- Proposed a frameworks named **HANN-Plus**, a multi-tasking neural network not only outperforms the state-of-the-art rating prediction methods but also can simulate user experience by generate textual explanation
- HANN-Plus outperforms the state-of-the-art rating prediction methods
- HANN-Plus can simulate user experience by generate textual explanation
- HANN-Plus solve the review loss problem in review-based recommendation system

## Torrance Tests of Creative Thinking (TTCT)

*Sep 2018 ~ Jun 2019*

- Built an android application for TTCT (*Thinking App*), a test of creativity, originally involved simple tests of divergent thinking and other problem-solving skills, which were scored on four scales: Fluency, Flexibility, Originality, and Elaboration
- We used a variety of machine-learning methods to design the scoring mechanism of Thinking (工研院 data, 變異性)
- First, implement fastText pre-trained word embedding Then calculate the similarity of users' answers Non-repetitive concept will be counted as points