

# Huan-Cheng Chang

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## RESEARCH INTEREST

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Exploring the interactions and intersections between HCI and AI, especially dialogue systems.

## EDUCATION

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### National Taiwan University (NTU), Taipei, Taiwan

09/2013 – Present

*Bachelor of Science, Electrical Engineering*, expected 01/2018

- Jr/Sr GPA: 4.02/4.30; Cumulative GPA 3.94/4.30
- Selected coursework:  
Machine Learning, Data Structure and Programming, Operating System, Computer Architecture, Web Programming\*, Psychoinformatics and Neuroinformatics, Intro. to Digital Speech Processing

## WORK EXPERIENCE

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### RD - Windows and Devices Group, Microsoft Corp.

07/2016 – 06/2017

*Software Intern*

*Taipei, Taiwan*

- Worked on a factory-monitoring system in cooperation with a business partner. Built the backend of the system, a Windows App for devices and a chatbot.
- Engaged in development and integration of Premium Surface Pen and related services.

## RESEARCH EXPERIENCE

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### Chinese Knowledge and Information Processing Group, Academia Sinica

07/2017 – Present

*Research Student in Dr. Wei-Yun Ma's Lab*

*Taipei, Taiwan*

#### Topic: Task-Oriented Dialogue System for Tour Recommendation

- Designed and built all components including language understanding, dialogue management and language generation.
- Generated new tour packages according to users' preferences using our graph-traversal algorithm.
- Created diversified responses using RNN combined with eHowNet, a lexical knowledge base.
- Implemented our work on Facebook Messenger Platform.
- Improving the recommendation strategy of our system using reinforcement learning.

### Machine Intelligence and Understanding Lab, National Taiwan University

04/2017 – 08/2017

*Undergraduate Research Student in Dr. Yun-Nung Chen's Lab*

*Taipei, Taiwan*

#### Topic: Natural Language Generation with Generative Adversarial Network

- Worked on generating natural language with given meaning representations using SeqGAN.

### Wireless and Mobile Networking Lab, National Taiwan University

09/2015 – 06/2016

*Undergraduate Research Student in Dr. Hung-Yu Wei's Lab*

*Taipei, Taiwan*

#### Topic: LTE-A Group Handover on Small Cells

- Conducted all experiments on small cells provided by Industrial Technology Research Institute.
- Reduced the amount of required messages for handover functions using our algorithm.

### Institute of Mathematics, Academia Sinica

07/2015 – 08/2015

*Summer Research Program*

*Taipei, Taiwan*

#### Topic: Mathematical Signal Processing and Data Analysis

- Gained knowledge in theories related to signal processing and data analytics.
- Implemented face recognition using Principle Component Analysis.

\* EE4049, 2017 Spring

## SELECTED PROJECTS

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### Hyper Cook

- Prototyped a web-based smart fridge management system combined with a chatbot which can recommend recipes and keep track of ingredients in the fridge.

### Taipei City Government FAQ Chatbot

- Built a retrieval-based chatbot which is operating in public now using the TextRank algorithm and FAQ datasets from Taipei City Government.

More on my website: <https://changhc.me/>

## HONOR

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**Undergraduate Research Fellowship** (~\$150/month)

09/2015 – 06/2016, 07/2017 – Present

## SKILLS

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**Programming/Scripting Languages:** JavaScript, Python, SQL, C#, C++, Java,  $\LaTeX$

**Software Frameworks/Libraries:** Tensorflow, Express.js, React.js, Scikit-learn

**Miscellaneous:** 3D Printing, Raspberry Pi, Git, Visual Studio, IntelliJ IDEA

## ACTIVITIES

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**Vice President, NTU Baking Club, Taipei, Taiwan**

02/2016 – 06/2016

- Held a special lecture and invited a professional teacher to share and demonstrate some skills.

**IT Manager, Viking Bar, Taipei, Taiwan**

09/2015 – 10/2016

- Managed our web server on a Linode server and maintained our WordPress blog.

**Public Relations Team, NTU Electrical Eng. Student Assn., Taipei, Taiwan**

09/2014 – 06/2015

- Succeeded sponsorship for student events and established sustainable relationship with high-tech companies in Taiwan for future cooperation.

**Guide, Gallery of NTU History, Taipei, Taiwan**

09/2014 – 01/2015

- Guided 12 groups with 15+ visitors per group and shared stories about NTU history with the audience.

## ADDITIONAL

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**Languages** Chinese (native), English (fluent), Taiwanese (elementary)

**Interests** Photography, Cooking, Swing Dance, Traveling