

# Huan-Cheng Chang

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## RESEARCH INTEREST

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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

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

## WORK EXPERIENCE

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**R&D - Windows and Devices Group, Microsoft Corp.**

07/2016 – 06/2017

*Software Engineer Intern*

*Taipei, Taiwan*

- Worked on a factory-monitoring IoT solution in cooperation with Nexcom. 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

*Advisor: Dr. Wei-Yun Ma*

*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

*Advisor: Dr. Yun-Nung Chen*

*Taipei, Taiwan*

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

- Generated natural language output with given meaning representations using SeqGAN

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

09/2015 – 06/2016

*Advisor: Dr. Hung-Yu Wei*

*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 in 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 (available to the 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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### **Formosa AI Grand Challenge, Most Promising Student Award**

10/2017

- Held by Ministry of Science and Technology, Taiwan

### **Student Research Fellowship**

07/2017 – Present

- Offered by Institute of Information Science, Academia Sinica

### **Undergraduate Research Fellowship**

09/2015 – 06/2016

- Offered by Department of Electrical Engineering, NTU

## **SKILLS**

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

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

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

**Miscellaneous:** 3D Printing, Raspberry Pi, Git (github: changhc), Visual Studio, IntelliJ IDEA

## **ACTIVITIES**

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

02/2016 – 06/2016

- Invited a professional teacher for a special guest lecture and demonstration

### **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 Engineering Student Association**

09/2014 – 06/2015

- Earned sponsorship for student events and established sustainable relationship with high-tech companies in Taiwan for future collaboration

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

09/2014 – 01/2015

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

## **INTERESTS**

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Photography, Cooking, Swing Dance, Traveling