

# Ti-Chung Cheng

COMPUTER SCIENCE RESEARCHER · SOFTWARE ENGINEER

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## Education

### University of Illinois at Urbana-Champaign

Aug. 2018 – Exp. May 2020

M.Sc. IN COMPUTER SCIENCE

- Thesis advised by Prof. Karrie Karahalios & Prof. Aditya Parameswaran

### The Chinese University of Hong Kong

Sep. 2013 – Dec 2017

B.Sc. IN COMPUTER SCIENCE WITH MINOR IN BUSINESS ECONOMICS

- Final Year Project: “Efficient nearest-neighbor search in Distributed Manner” advised by Prof. James Cheng

## Research Interest

Human-in-the-loop Data Analytic, Human-Computer Interaction, Data Management

## Skills

**Programming skills** Python, C/C++, Java, Javascript, Node.js, MongoDB, Node.js, HTML/CSS

**Analytics & Research** Research, Public Speaking, SQL/MySQL, Splunk, Pandas, Scikit-learn

## Publication

### A General and Efficient Querying Method for Learning to Hash.

JINFENG LI, XIAO YAN, JIAN ZHANG, AN XU, JAMES CHENG, JIE LIU, KELVIN K. W. NG, **TI-CHUNG CHENG**, SIGMOD CONFERENCE 2018: 1333-1347

## Research and Professional Experience

### Software Engineer Intern, Salesforce – Java, Splunk, Data Analytic

California, USA

LIGHTNING WEB COMPONENTS, R&D DEPARTMENT, SALESFORCE

May 2019 - Aug. 2019

- Built pipeline and designing dashboards for daily logs on a billion scale for performance metrics.
- Optimized dashboard queries by 10x with better comprehensibility.

### Research Assistant, UIUC, – Java, Javascript, Python

Illinois, USA

DEPARTMENT OF COMPUTER SCIENCE, UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Jan. 2019 - May 2019

- Researched on human mental models related specifically of spreadsheets, developing on working papers.
- Explored voting and decision making mechanism in social computing, developing on working papers.

### Machine Learning Research Intern, KKBOX – Python, Presto

Taipei, Taiwan

ML TEAM, R&D DEPARTMENT, KKBOX

May 2018 - Aug. 2018

- Researched and implemented algorithms that assist in domain-specific machine language understanding with 90%+ accuracy.
- Designed & built pattern-based relation extraction pipeline for multi-language music-centric content from scratch using billions of music data.

### Research Student & Summer Research Intern, CUHK – C/C++, Python

Hong Kong

HUSKY LAB - MACHINE LEARNING TEAM, THE CHINESE UNIVERSITY OF HONG KONG (ADVISOR: PROF. JAMES CHENG)

Dec. 2015 – Dec. 2017

- Conducted research on distributed hash-based nearest-neighbor search algorithms with a publication at SIGMOD.
- Built 15% more time efficient and scalable Image Retrieval system compared to OpenCV FLANN

### Summer Research Intern, NCHC – Python, MySQL

Tainan, Taiwan

INTERNET SECURITY TEAM, NATIONAL CENTER FOR HIGH-PERFORMANCE COMPUTING (SUPERVISOR: PROF. ANN, HSING-YEN)

Jul. 2015 – Aug. 2015

- Designed and implemented database pipeline to retrieve and analyzes malicious fast-flux domains helping researchers analyze attacker behaviors.
- Results later published in *Tsai Y.L., Chang C.R., An H.Y., Lee C.S. Using BDTS to detect IP changes of malicious domains over time. TANET 2018.*

## Selected Personal Projects

### [Data Science] Exploring Potential of Asian Low-Cost Carriers Forming Strategic Alliance

Python, Economics, Data Analytic

INDIVIDUAL RESEARCH ON THE AVIATION INDUSTRY IN AREAS OF DECISION SCIENCE USING COMPUTER SCIENCE TECHNIQUES

- Collected thousands of flight data to design evaluation metric with a Python scraper for Asian low-cost carriers through decision science research

### [Web] The Official Website for CUHK Taiwanese Student Association

MongoDB, Express.js, React.js

THE WEB PLATFORM THAT SERVES AS THE GATEWAY TO ASSIST INCOMING STUDENTS AND A PORTAL TO SHARE TAIWANESE CULTURE

- Responsible for product management, database design and back-end development with a team of 10
- Implemented 20+ API, responsible for maintenance and database design. Currently having 1500+ visitors per year.

### [Chatbot] Rachel: friends and family health-centered chatbot

MongoDB, Express.js, Luis.ai

HACKATHON PROJECT. A CHATBOT TO INTEGRATE CALENDARS WITH HEALTH CONDITIONS OF FAMILIES.

- Designed the system architecture and built 30+ back-end APIs for the chatbot.