

## EDUCATION

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- **The Hong Kong Polytechnic University (PolyU)** Hong Kong  
Bachelor of Science in Computing (First Class Honors) *Aug. 2014 - Jun. 2018*
  - GPA: 3.74/4.0; GPA for last two years: 4.0/4.0
  - Graduate representative for valedictory speech at the university congregation
  - Selected subjects: Comp. Networking (A), HCI (A), Multimedia (A+), Big Data Analytics (A), Comp. Org. (A), Algorithms (A), Software Engineering (A+), AI (A+), Mobile Computing (A), Web Dev. (A), Capstone Project(A+)
- **University of Maryland (UMD)** College Park, MD, USA  
Exchange Student *Aug. - Dec. 2016*

## PUBLICATIONS & MANUSCRIPTS

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1. **Mingyu Ma**, Kevin Bowden, Jiaqi Wu, Wen Cui, Marilyn Walker. Implicit Discourse Relation Identification for Open-domain Dialogues. Work in progress.
2. Yunfei Long\*, **Mingyu Ma**\*, Qin Lu, Rong Xiang, Chu-Ren Huang. Dual Memory Network Model for Sentiment Analysis of Review Text. Submitted to *Expert Systems with Applications*. (\*: Co-first authors)
3. Yunfei Long\*, **Mingyu Ma**\*, Qin Lu, Rong Xiang, Chu-Ren Huang. Dual Memory Network Model for Biased Product Review Classification. In *2018 Conf. on Empirical Methods in NLP's Workshop on Computational Approaches to Subjectivity, Sentiment and Social Media Analysis*. (\*: Co-first authors) [PDF]
4. Linchuan Xu, **Mingyu Ma**, Jiannong Cao, Xiaokai Wei, Kenji Yamanishi. cate2vec: Learning Numerical Representations of Categorical Symbols by Adversarially Encoding Attribute Associations. Submitted to *2019 Eur. Conf. on Machine Learning and Princ. and Practice of Knowledge Discovery in Databases Journal Track*.
5. Shan Jiang, Jiannong Cao, Hanqing Wu, Yanni Yang, **Mingyu Ma**, Jianfei He. BlochIE: a BLOcKchain-based platform for Healthcare Information Exchange. In *2018 IEEE Intl. Conf. on Smart Computing*. [PDF]

## RESEARCH EXPERIENCE

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- **Univ. of California Santa Cruz Natural Language and Dialogue Systems Lab** Santa Cruz, CA, USA  
Research Intern to [Prof. Marilyn Walker \(Association for Computational Linguistics Fellow\)](#) *Jun. - Nov. 2018*
  - Implicit Discourse Relation Identification for Open-domain Dialogues**
    - Automatically constructed dataset of discourse relation argument pairs from dialogue corpus, evaluated on MTurk
    - Utilized features uniquely in dialogue systems to help the discourse relation identification
    - Implemented feature extraction for dialogue and linguistic features, trained models like CNN and logistic regression
  - Actor Disambiguation for SlugBot in Amazon Alexa Prize Competition**
    - Developed algorithm to disambiguate common noun or phrase to provide better response for generic user utterances
    - Utilized word embeddings (GloVe and ELMo), WordNet and VerbNet to match noun or phrase to limited topics
- **PolyU Dept. of Computing Chinese Computing Lab** Hong Kong  
Capstone Project Student to [Prof. Qin Lu \(Interim Head of PolyU Dept. of Computing\)](#) *Sep. 2017 - Jun. 2018*
  - Dual Memory Network Model for Product Review Classification** [derek.ma/proj/dupmn](https://derek.ma/proj/dupmn)
    - Designed a dual memory network model with external memory mechanism for sentiment analysis utilizing related documents of users and products; constructed hierarchical LSTM networks to obtain document embeddings
    - Implemented LSTM networks and memory networks using TensorFlow and achieved the state-of-the-art accuracy
    - Won the only Outstanding Capstone Project Award in the Dept. of Computing (1/100)
- **PolyU Dept. of Computing Internet and Mobile Computing Lab** Hong Kong  
Research Assistant to [Prof. Jiannong Cao \(IEEE Fellow, ACM Distinguished Member\)](#) *Jan. 2017 - Jun. 2018*
  - Learning Representations of Categorical Symbols by Adversarially Encoding Attribute Associations**
    - Designed an adversarial learning algorithm to learn distributed embedding for categorical symbols in data mining task
    - Implemented the algorithm in Python and evaluated the performance in terms of classification task on datasets from UCI ML repository, and achieved better performance than other state-of-the-art embedding methods
  - Blockchain-based Layered-federation Distributed Data Sharing for Huawei** [derek.ma/proj/ai3](https://derek.ma/proj/ai3)
    - Constructed Blockchain system from scratch to do data publishing, sharing and requesting tasks as lead developer
    - Used Python, Django and gRPC to realize blocks packing and tracking, encryption, P2P network, file transfer and UI
- **Massachusetts Institute of Technology Geospatial Data Center (MIT GDC)** Cambridge, MA, USA  
Research Intern to [Dr. Abel Sanchez](#) and [Prof. John R. Williams](#) *Jul. - Aug. 2017*
  - A Learning and Grading Solution for Engineering Computation Education** [derek.ma/proj/onexi](https://derek.ma/proj/onexi)
    - Designed a system to optimize practicing and grading flow and collect behavioural data for programming course
    - Developed a Visual Studio Code extension, a grading API and a web portal; integrated GitHub functions
    - The system developed has been deployed in the MIT 1.00 course for three semesters successfully

## WORK EXPERIENCE

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- **Sohu, Inc.** (a NASDAQ listing online media and Internet services group) Shanghai, China  
Front-end Web Development Intern *Jun. - Jul. 2016*
  - Delivered 5 advertisement websites for online promotion and product demonstration using HTML5 and JavaScript

## PROJECTS

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- **Sense+ Computer Vision Application for the Visually Impaired** Hong Kong; *Feb. 2017 - May 2018*  
Mentor: **Dr. Henry C. B. Chan** (Associate Head of PolyU Dept. of Computing) [derek.ma/proj/senseplus](http://derek.ma/proj/senseplus)
  - Developed a object detection model using TensorFlow to recognize people and locate personal belongings
  - Developed natural language voice control interface, supported Android and iOS using Progressive Web App
  - Won Champion of the region in Microsoft Imagine Cup, and Silver Award in Hong Kong ICT Awards
  - Collaborated with the HK Blind Union and tested on real users; covered by major regional medias like CCTV
- **“Tech For Development” Carbon Neutral Learning Center** Kampong Speu, Cambodia; *Apr - Jun. 2017*  
A solar powered library for primary school using second-hand container [derek.ma/proj/tech4d](http://derek.ma/proj/tech4d)
  - Designed and implemented solar panel electricity system and ventilating system in the first library in that area
  - Worked with local NGO: Young People Do Cambodia; facilities operated successfully for more than 18 months
- **Rwanda Service Project on Power Supply by Solar Systems** Kigali, Rwanda; *Jan - May. 2015*  
Mentor: **Dr. Grace Ngai** and **Dr. Stephen Chan** [derek.ma/proj/rwanda](http://derek.ma/proj/rwanda)
  - Designed and produced solar system models; prepared and held technology workshops with teammates
  - Installed 45 solar systems in a week for several villages without electricity; collaborated with local NGO

## HONORS, AWARDS & SCHOLARSHIPS

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- **Microsoft Imagine Cup 2017:** Champion and Most Innovative Award of the Region (Hong Kong) *Jul. 2017*
  - Top 1 among all 35 teams in the region; global top 32 of all teams from 39 countries or regions
- **Hong Kong ICT Awards Student Innovation Award (Tertiary or Above):** Silver Award *Mar. 2018*
- **Best Capstone Project Competition:** Outstanding Project Award (Top 1 in the dept., 1/100) *Jun. 2018*
- **Hong Kong Techathon:** Winner (10/150) *Jan. 2018*
- **PolyU Smart Computing Competition:** Champion *Apr. 2017*
- **Youth Volunteer Service Conference:** Best Creative Service Project (Top 1 in the Greater China) *Nov. 2017*
- **Selected Scholarships**
  - Commercial Radio 50th Anniversary Scholarship (Only 1 in the dept., 1/400) *Oct. 2016*
  - CMA (The Chinese Manufacturers' Association of Hong Kong) & Donors Scholarship (3/400) *Jan. 2018*
  - Hong Kong Government Scholarship Fund Talent Development Scholarship *May 2018*
  - Undergraduate Summer Research Abroad Sponsorship *May 2017*
  - Chinese Mainland and Overseas Activities Fund *Nov. 2016*
  - Wong Tit-Shing Student Exchange Scholarship *Apr. 2016*

## ACTIVITIES

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- **InnoCarnival** (largest regional IT exhibition): Showcase (one of the 4 highlight projects for PolyU) *Oct. 2017*
- **HKTDC International ICT Expo** (largest spring IT fair in Asia): Invited Showcase *Apr. 2018*
- **PolyU Computer App Programming (CAP) Contest 2017:** Examiner *Nov. 2017*
- **2016 Summer Olympic Games in Rio de Janeiro, Brazil:** International Volunteer *Aug. 2016*
- **PolyU Dept. of Computing:** Graphic Designer (branding and social media marketing) *Nov. 2015 - May 2016*
- **PolyU Chinese Mainland Students' Association:** Internal Vice President *Apr. 2015 - Apr. 2016*

## SKILLS

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- **Programming Languages:** Python, Java, R, JavaScript, Node.js
- **Machine Learning and Natural Language Processing:** TensorFlow, Sentiment or Emotion Analysis, Memory Network, Dialogue Systems, Reinforcement Learning, Discourse Relation, Crowdsourcing, GANs
- **Web Applications Development:** Django, Java Servlet, JSP, HTML, CSS, Web Components, PWA

## LANGUAGE PROFICIENCY

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English (professional working proficiency), Mandarin (native), and Cantonese (intermediate)