

## Maggie Ma

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### SKILLS (TECHNICAL, MANAGEMENT & LANGUAGE)

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- Instruments: HPLC, LCMS, Spectrophotometer, Volumetric/Coulometric Karl Fischer, UV-Vis, Dissolved Oxygen/pH Sensors, ORP Sensors and many wet chemistry methods and bacteria experiments.
- Unit Operations: Distillation, Heat Exchange, Mixing, and Reactions; and understanding P&ID.
- Software: Chemcad (chemical process simulation), COMSOL (reaction simulation), Super Pro (bioprocess simulation), Matlab (programming), Linux and Microsoft Office. Plus strong Math skills.
- Excellent soft skills: written and oral communication, problem solving, multitasking, organizing, troubleshooting, self-motivating, detail oriented, and team building.
- Bilingual in English and Chinese, work well with a multi-cultural and diverse work force.

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### EDUCATION

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- **University of Notre Dame**; Notre Dame, IN Jan. 2015  
*Master of Science, Chemical Engineering*  
GPA: **3.52 /4.0**
- **Trine University (formerly Tri-state University)**; Angola, IN May 2012  
*Bachelor of Science, Chemical Engineering*  
GPA: **3.94 /4.0 -Magna Cum Laude**
  - University Honors: *President's list all semesters; Who's Who Among College Students*
  - Honor Prize for senior design project "Production of Non-alcoholic Beer Using a Reverse Osmosis Membrane Process"
  - Passed Fundamentals of Engineering exam –**EIT** (2012)
  - Awarded AIChE Student Safety Certificate Program – **SACHE** (2012)

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### PROFESSIONAL EXPERIENCE

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**Marketing Associate & Manager Assistant**, Light Health Center, San Jose, CA Nov.-Dec.2014

- Increased sales for 25% by gift cards and promotions on Groupon and Amazon Local
- Improved company website, social media such as Yelp and Facebook.
- Customer service through phone calls and emails and data analysis and documentation of company information.

**Chemistry Professional Intern, Walt Disney World**, Buena Vista, FL June-Sep. 2014

- Quality Control of 5.7 million US gallons salt water in the Aquarium in Epcot by daily water chemistry (pipetting, titration, instruments: LC, Spectrophotometer, turbidity meter) in analytical laboratory and field locations (instruments: ORP/pH/Oxygen sensors and chlorometer), as well as ensuring proper function of mechanical and disinfection equipment related to the filtration and recirculation of all animal system water, including operation, monitoring and troubleshooting.
- Cooperated with operation and maintenance teams and increased the efficiency of over 20 disinfection systems at Animal Kingdom by 15%.
- Assured the Chlorination level for human interaction water systems in Animal Kingdom meet the State Law daily.
- Proficient with microbial surveys including bacteriological water analysis for coliform and E-coli.
- Organized and maintained lab materials and instruments, routine calibration, and daily documentation and reports.
- Developed in-depth skills for optimizing water quality within animal habitats and environmental conservation.
- Demonstrations and interactions with guests about how chemistry is involved in animal habitats.

**Research and Teaching Assistant**, Chemical Engineering Department, Notre Dame, IN Aug. 2012-present

- Research/Lab work on Ionic Liquids as CO<sub>2</sub> absorbents for higher energy efficiency and environment conservation. - Dr. Joan Brennecke (the National Academy of Engineering) research group & **U.S. Department of Energy**
  - Process engineering: Ionic Liquids in their industrial application for post-combustion CO<sub>2</sub> capture.
  - Ionic Liquids reprotonation (using HPLC) to determine optimal Ionic Liquids for CO<sub>2</sub> capture in flue gas.
- Teach labs and lecture recitations, hold office hours to clarify students' questions and improve their comprehension of concepts, and grade homework and tests.

**Tutor**, Academic Services for Student-Athletes, Notre Dame, IN

July 2013-May 2014

- Previewed and reviewed course contents and practice problems to refine students' problem solving and critical thinking skills.
- Improved the grades of 20% of students by two grade levels and 60% of students by one grade level.

*Private Piano Teacher*, Notre Dame, IN

July 2013-May 2014

- Taught individual piano and music appreciation. Improved students from entry level to medium level.

## **SKILLS (TECHNICAL & LANGUAGE)**

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## **LEADERSHIP & SERVICE**

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*Organizer*, Women in STEM Lunch

Feb. 2013- May 2014

- Hosted monthly luncheon dedicated to professional development and social networking for women in science and engineering including presentations from students, faculties and staffs.

*Committee Member*, Society of Women Engineers

June 2013-present

- Organize activities including volunteer works, attending conferences, and professional presentations.

*Committee Member*, Graduate Student Professional Development Group

Sep. 2013-present

*Member*, Tau Beta Pi, the Engineering Honor Society

2010-present

*Leader*, 'Paint Like a Champion' Team for 2013 & 2014 'Relay For Life at Notre Dame'

Apr. 2013&2014

- Raised \$800 by selling painting artworks and Chinese calligraphy.

*Treasurer*, Omega Chi Epsilon, the National Chemical Engineering Honor Society

May 2011-2012

*Vice President*, Trine University International Student Association

2008-2012

- Increased the annual founding by 50%; mentored new coming international students; hosted International Night for the local community, which made \$600 profit and were filmed for television.

## **PUBLICATION**

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'Phase-Change Ionic Liquids for Postcombustion CO<sub>2</sub> Capture' S Seo, LD Simoni, **M Ma**, MA DeSilva, Y Huang, JF Brennecke *Energy Fuels*, 2014, 28 (9), pp 5968–5977 Aug 5, 2014

## **HONORS**

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- Top 10 in The 16<sup>th</sup> Michigan Autumn Take Home Math Challenge in November, 2010
- Awarded \$20,000 each year Trine Chair's Chemical Engineering Scholarship 2009-2012
- Won the first prize in Trine Engineering Quiz Competition with my partner for both 2009 and 2010 academic years
- Awarded \$10,000 Trine-China International Scholarship 2008-2009 academic year
- Awarded \$500 Trine Dean's Engineering Scholarship 2009 spring semester
- Won 2009 Trine's Martin Luther King Essay Competition