

Kehang Han

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EDUCATION	Massachusetts Institute of Technology , Cambridge, MA <i>PhD Candidate</i> <i>Advisor: William Green</i>	Aug 2012 - Dec 2017
	<ul style="list-style-type: none">• Chemical Engineering and Computer Science• Overall GPA: 4.9/5.0	
	Tsinghua University , Beijing, China <i>Bachelor of Science</i>	Sep 2008 - Jul 2012
	<ul style="list-style-type: none">• Chemical and Biological Engineering• Rank: 1/120	
SOFTWARE EXPERIENCE	Reaction Mechanism Generator (RMG, rmg.mit.edu) <i>Lead Developer</i>	Jan 2013 - Present
	<ul style="list-style-type: none">• Led a team with 10 people at MIT and Northeastern University• Applied high performance computing (memory reduction, parallelism) to RMG• Maintained cross-platform (Linux, OSX, Windows) compatibility• Constructed Continuous Integration Test Platform (RMG-tests) for RMG	
	PROtein Design Algorithm (PRODA) <i>Developer</i>	Sep 2011 - Jul 2012
	<ul style="list-style-type: none">• Development team member of PRODA, a software for designing protein using C• Designed and implemented a heuristic optimization algorithm for MILP• Achieved 20 times speed-up for large enzyme systems	
DATA & WEB EXPERIENCE	Amazon Product Review Summerizer (SRS, srs.mit.edu) <i>Lead Developer</i>	Mar 2016 - Sep 2016
	<ul style="list-style-type: none">• Led a team with 3 people at MIT• Built an NLP web application in Python, Flask and MongoDB• Designed and implemented four-step pipeline: review scraping, aspect classification, sentiment scoring and front-end interaction• Particularly developed product-aspect classifiers using MaxEntropy and Word2Vec	
	Supply Chain Planner in Shell Oil , Hamburg, Germany <i>Data Science Intern</i> <i>Supervisor: Marc Thomas</i>	Jun 2015 - Sep 2015
	<ul style="list-style-type: none">• Participated in building supply chain optimization tool• Created analysis and visualization tools using R for scenario study	

MIT Sidney-Pacific Website (s-p.mit.edu)*Web Chair*

Apr 2016 - Present

Sidney-Pacific website is an MIT dorm website that has integrated many residential services, which include automatic campus shuttle tracking, smart laundry reminder, inventory management and analysis system, real-time package notifications, house repairing and dorm events publicizing, etc.

- Major developer for the website written in PHP and SQL
- Developed resident package management system
- Automated inventory check-in-out, usage analysis and reporting system

**ENGINEERING
CONSULTING****Cabot Corporation**, Billerica, MA*Engineering Consultant*

Mar 2014 - Apr 2014

- Performed lab study on developing new technology of silica surface treatment
- Demonstrated its feasibility and economical advantages over current practices

SGE Energia, Houston, TX*Engineering Consultant Lead*

Jan 2014 - Mar 2014

- Led a team with 3 MIT engineering consultants
- Designed and constructed lab-scale Fischer-Tropsch (FT) reactor
- Developed methodology for pressure drop estimation at various operation conditions
- Studied heat transfer in FT reactor and applied it to guiding reactor start-up

**AWARDS
HONORS****Energy Analytics**

- MIT Energy Initiative (MITEI) Fellowship in 2016
- 3rd Prize (3/30 teams) of MIT Energy Hackathon in 2015

Mathematics

- 3rd/300+ in Mitsui Chemicals Cup Process Design Contest in 2011
- 2nd Prize in American Mathematical Contest in Modeling in 2011
- 1st Prize in Chinese National Mathematical Contest in Modeling in 2010

Physics & Chemistry

- 1st Prize in Beijing Physics Contest in 2009
- 1st Prize in Chinese National Olympic Chemistry Competition in 2007

**SELECTED
PUBLICATIONS**

- **K. Han**, W.H. Green, and R.H. West, *On-the-fly pruning for rate-based reaction mechanism generation*, Computers & Chemical Engineering
- X. Huang, **K. Han**, and Y. Zhu, *Systematic optimization model and algorithm for binding sequence selection in computational enzyme design*, Protein Science
- Y. Zhang, **K. Han**, D. Lu, and Z. Liu, *Reversible encapsulation of lysozyme within mPEG-b-PMAA: experimental observation and molecular dynamics simulation*, Soft Matter

SKILLS**Languages:** Python, C/C++, Java, R, Matlab, PHP**Database:** SQL, MongoDB**Design:** Illustrator, Lightroom, Photoshop**Others:** AWS, server admin