

# FENG LING

November, 2015

## PERSONAL

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**Birth Year:** 1992

**Citizenship:** China, People's Republic of

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## EDUCATION

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2010 - 2015      **The University of Texas at Austin**, Austin, TX  
B.S. Pure Mathematics, December 2015  
B.S. Aerospace Engineering (Astronautics), December 2015  
Computational Science and Engineering Certificate Program, May 2015  
Halliburton Business Foundations Summer Institute, July 2012  
GPA: 3.736/4.0 (178 GPA hr)

## EMPLOYMENT

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2013 - present      **Undergraduate Research Assistant**, Center for Space Research at UT Austin  
2011      **Summer Intern**, Zhongchu Development Stock Ltd., Tianjin Xingang Branch

## HONORS AND AWARDS

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2015      **Meritorious Winner Team Lead**, COMAP Mathematical Contest In Modeling  
Problem B: Searching lost aeroplane in open water, general advise from *Dr Andrew Spann*  
2011      **Member**, Aerospace Honor Society Sigma-Gamma-Tau UT Austin Chapter  
2010      **Team Lead**, Student Engineering Council Alternative Energy Challenge 3rd place  
2010      **Finalist**, Intel International Science and Engineering Fair

## PROJECTS

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2014 - present      **At Center for Space Research**, supervised by *Prof. Srinivas Bettadpur*  
Parametric study on dynamical effects of different models of accelerometer and center of gravity misalignment, results in preparation for publication  
2014 - 2015      Assisted graduate students on spacecraft and mission thermal environment modeling project  
2014      Analyzed the correlation between GRACE accelerometer reading anomalies, thruster firing pattern, and star camera measurement deviations  
2013 - 2014      Studied the geographical significance of GRACE on-board SNR and post-fit residue of the Earth gravity model  
  
2014 - 2015      **Research Project for the CSE Certificate Program**, advised by *René Hiemstra*  
Investigated applications of discrete exterior calculus and discrete differential geometry for exact conservation Finite Element Analyses  
Explored parallel computing implications using OpenMP  
  
2014      **Senior Design Team Project**, CubeSat Orbital Re-entry Vehicle System (CORVUS)  
Investigated challenges and possible solutions for CubeSat orbital (LEO) re-entry problem  
In charge of simulation of the re-entry and parameter design for thermal subsystem  
  
2012 - 2014      **for Longhorn Rocket Association**  
Designed and implemented software ground station and developed post-flight sensor fusion analysis for a high power (L2) rocket payload, joint with *Scott Almond*  
2011      Designed and machined model rockets from primitive components (e.g. uncured fiberglass)  
  
2012      **for Satellite Navigation Courses**  
Built a software GPS receiver/processor using MATLAB  
Tested dual frequency carrier-phase differential GPS capability for the GRID receiver  
  
2010 - 2011      **TRICK Modeling and Simulation Research Initiatives joint with NASA-JSC**  
Generated Mars rover landing graphical simulation, results presented at JSC

Developed interfacing codes based on NASA software packages (TRICK, AGEA, and EDGE)

## GRADUATE COURSEWORK

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Fall 2015	Algebra, <i>Prof. Felipe Voloch</i> K-theory as it appears in geometry, <i>Prof. Dan Freed</i> 4-Manifold Topology (Auditing), <i>Prof. Robert Gompf</i> Rational Homotopy Theory (Auditing), <i>Dr Jonathan Campbell</i>
Spring 2015	Differential Topology, <b>A-</b> , <i>Prof. Andrew Neitzke</i> D-modules (Audited), <i>Dr Sam Gunningham</i> Ergodic Theory and Dynamics (Audited), <i>Prof. Lewis Bowen</i>
Fall 2014	Real Analysis, <b>A</b> , <i>Prof. Lewis Bowen</i> Algebraic Topology, <b>B</b> , <i>Prof. Michael Starbird</i> Homotopy Type Theory (Audited), <i>Prof. Andrew Blumberg</i>
Spring 2014	Complex Analysis, <b>A-</b> , <i>Prof. Thomas Chen</i> Stochastic Detection and Estimation, <b>B+</b> , <i>Prof. Todd Humphreys</i>
Fall 2013	Finite Elements Methods, <b>A</b> , <i>Prof. Mary Wheeler</i>
Spring 2013	GPS Signal Processing, <b>A-</b> , <i>Prof. Todd Humphreys</i>

## CONFERENCE COURSES

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Fall 2015	<b>Topics in algebraic topology</b> , advised by <i>Prof. Andrew Blumberg</i> Mainly studying A Concise Course in Algebraic Topology (e.g. cup products (LS categories), Poincaré duality, (co)fibrations and (co)fiber sequences, CW complexes)
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## TALKS

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Fall 2015	<b>Directed Reading Program (DRP)</b> , (co)fiber sequences, mentored by <i>Ernest Fontes</i>
Spring 2015	<b>DRP</b> , What is persistent homology, mentored by <i>Ahmad Issa</i>
Fall 2014	<b>DRP</b> , Čech cohomology of projective spaces, mentored by <i>Dr Yuecheng Zhu</i>
Spring 2014	<b>DRP</b> , Classification of Du-val singularities, mentored by <i>Dr Yuecheng Zhu</i>
Fall 2013	<b>DRP</b> , How to blow up double points in an affine plane and why you should do it too, mentored by <i>Dr Hendrik Orem</i>

## MISC. EXTRACURRICULAR

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2013 - present	<b>Active Member</b> , Math Club
2011 - present	<b>Coursera, Udacity, and other MOOC experiences</b> Completed with Statement of Accomplishment in Cryptography, Software Testing, Machine Learning, Database Management, Artificial Intelligence, Automata Theory, Epigenetic Control of Gene Expression, Exploring Particle World, and Classical Chinese Philosophy.
2011 - 2014	<b>Active Member</b> , Longhorn Rocket Association
May 2014	<b>Participant</b> , LeaderShape Institute
Summer 2013	Programmed and assembled FPV-enabled quad-rotor PCB-frame MAV for fun
2010 - 2011	<b>Active Member</b> , Engineering for a Sustainable World at UT Austin
2010	<b>Member</b> , IEEE Robotics and Automation Society Participated in Robot-a-thon autonomous robot building competition
2010	<b>Active Member</b> , Freshman Engineering Committee of Student Engineering Council

## VOLUNTEERING

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2015	Introduce a Girl to Engineering Day (Ballon rockets and iterative engineering design)
Summer 2013	UT Radionavigation Lab (Studying WAAS)
2011	Habitat for Humanity (Actually helped roofed and fenced a house) Explore UT Tour Guide
2009	Music Units Societies Everywhere Bellaire Art Club
2008 - 2009	Methodist Hospital
2007 - 2009	Bellaire City Library