

FENG LING

November, 2015

PERSONAL

Birth Year: 1992
Citizenship: China, People's Republic of
E-mail: FLing@utexas.edu

Address: 5505 Avenue F, Austin, TX 78751-1312
Mobile: +1 (713) 666 - 2935
Webpage: <http://fl3537.me/>

EDUCATION

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

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

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

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 GRACE spacecraft 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 Project**, CubeSat Orbital Re-entry Vehicle System (CORVUS), in a team of 12
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**, advised by Prof. Todd Humphreys
Built a software GPS receiver based on Square Root Information Filters in MATLAB
Tested dual frequency carrier-phase differential GPS capability for the GRID receiver

2010 - 2011 **TRICK Modeling and Simulation Research Initiatives**, in a team of 6
Generated Mars rover landing graphical simulation, results presented at NASA-JSC

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

GRADUATE COURSEWORK

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, A- , <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, A , <i>Prof. Lewis Bowen</i> Algebraic Topology, B , <i>Prof. Michael Starbird</i> Homotopy Type Theory (Audited), <i>Prof. Andrew Blumberg</i>
Spring 2014	Complex Analysis, A- , <i>Prof. Thomas Chen</i> Stochastic Detection and Estimation, B+ , <i>Prof. Todd Humphreys</i>
Fall 2013	Finite Elements Methods, A , <i>Prof. Mary Wheeler</i>
Spring 2013	GPS Signal Processing, A- , <i>Prof. Todd Humphreys</i>

CONFERENCE COURSES

Fall 2015	Topics in algebraic topology , 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

Fall 2015	Directed Reading Program (DRP) , (co)fiber sequences, mentored by <i>Ernest Fontes</i>
Spring 2015	DRP , What is persistent homology, mentored by <i>Ahmad Issa</i>
Fall 2014	DRP , Čech cohomology of projective spaces, mentored by <i>Dr Yuecheng Zhu</i>
Spring 2014	DRP , Classification of Du-val singularities, mentored by <i>Dr Yuecheng Zhu</i>
Fall 2013	DRP , 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

2014 & 2015	Participant , texTAG: Texas Undergraduate Topology and Geometry conference
2013 - present	Active Member , Math Club
2011 - present	Coursera, Udacity, and other MOOC experiences 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	Active Member , Longhorn Rocket Association
May 2014	Participant , LeaderShape Institute
Summer 2013	Programmed and assembled FPV-enabled quad-rotor PCB-frame MAV for fun
2010 - 2011	Active Member , Engineering for a Sustainable World at UT Austin
2010	Member , IEEE Robotics and Automation Society Participated in Robot-a-thon autonomous robot building competition
2010	Active Member , Freshman Engineering Committee of Student Engineering Council

VOLUNTEERING

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