FENG LING

November, 2015

PERSONAL

Birth Year: 1992
Citizenship: China, People's Republic of
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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

At Center for Space Research, supervised by *Prof. Srinivas Bettadpur*

2014 - present 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

for Longhorn Rocket Association

2012 - 2014 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, *Prof. Felipe Voloch*
	K-theory as it appears in geometry, *Prof. Dan Freed*
	4-Manifold Topology (Auditing), *Prof. Robert Gompf*
	Rational Homotopy Theory (Auditing), *Dr Jonathan Campbell*
Spring 2015	Differential Topology, **A-**, *Prof. Andrew Neitzke*
	D-modules (Audited), *Dr Sam Gunningham*
	Ergodic Theory and Dynamics (Audited), *Prof. Lewis Bowen*
Fall 2014	Real Analysis, **A**, *Prof. Lewis Bowen*
	Algebraic Topology, **B**, *Prof. Michael Starbird*
	Homotopy Type Theory (Audited), *Prof. Andrew Blumberg*
Spring 2014	Complex Analysis, **A-**, *Prof. Thomas Chen*
	Stochastic Detection and Estimation, **B+**, *Prof. Todd Humphreys*
Fall 2013	Finite Elements Methods, **A**, *Prof. Mary Wheeler*
Spring 2013	GPS Signal Processing, **A-**, *Prof. Todd Humphreys*

CONFERENCE COURSES

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

TALKS

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

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