

# Grace Xiang Gu

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## EDUCATION

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**Massachusetts Institute of Technology**, Cambridge, MA

*Master of Science in Mechanical Engineering*

May 2014 (expected)

Research: Sloan Automotive Lab – Modeling of oil composition in engine components to reduce ash and carbon emissions

**University of Michigan**, Ann Arbor, MI

*Bachelor of Science in Mechanical Engineering*

May 2012

Cumulative GPA: 3.85/4.00 – Summa Cum Laude

Recipient, James B. Angell Scholar, awarded for 4 consecutive terms with all “A” record

Recipient, William J. Branstrom Prize, awarded to top 5% of Freshman class

Recipient, Mechanical Engineering Leader Award and Mechanical Engineering Spirit Award

### Senior Design Project: Patent for Skin Biopsy Device

- Designed and manufactured a noninvasive biopsy device that can extract skin from patient, store skin for research, and image skin under the Atomic Force Microscopy (AFM) machine
- Received patent for intuitive skin biopsy device that extracts and stores skin in a single step with minimum pain

## WORK EXPERIENCE

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**Procter & Gamble – Gillette**, Boston, MA

Summer 2012

*Process Engineering Intern*

- Designed and delivered equipment solutions for razor blades to enable development testing at Gillette, increasing capability to deliver bigger, better, faster product initiatives with \$50,000 budget
- Managed development of equipment list, scope boundaries, and cost estimates for mixing device that helped push forward purchasing of more accurate powder mixing procedure by 25% and increased mixing efficiency by 600%
- Oversaw mixing test plan development work at P&G’s Cincinnati site and collaborated with 20 experts from several other business units to provide recommendations for future innovative razor cartridge designs

**The Boeing Company – Boeing Commercial Airplanes**, Everett, WA

Summer 2011

*787 Wings Structure Engineering Intern*

- Accelerated overall construction of wing support structures with five senior engineers by constantly updating schedule and ensuring objectives were accomplished sequentially in product development phase of next version of Boeing 787 airplane
- Performed structural and stress analysis on wings design components using ABAQUS/CAE to decrease need for re-engineering, hence expediting completion of construction and mitigating risk in order to ensure safety of aircraft passengers
- Directed \$500,000 budget structural test program that determined failure load of composite specimen and consolidated information into document that matches plane specifications to respective load thresholds, reducing time of project by 50%

**Caterpillar, Inc. – Virtual Product Development**, Peoria, IL

Summer 2010

*Mechanical Engineering Analysis Intern*

- Executed finite element numerical simulations using ABAQUS/CAE to verify bolt-boss assembly fatigue life in engine-block, confirming senior engineer’s understanding of cracking in bolt-boss assembly used for product design cycle
- Conducted 10 bolt-boss fatigue tests at Advanced Motion Technologies (AMT) lab to prepare for re-design of geometry in CAD to ultimately size the engine block component
- Developed new general-purpose Graphic User Interface (GUI) within MATLAB environment for visualizing numerical result which empowered engineers to diminish problematic post-processing analysis time for complex physical problems

## EXTRACURRICULAR ACTIVITIES

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**Tau Beta Pi – Engineering Honors Society**

- Taught 200 underprivileged students the essence of engineering and problem solving by giving them design problems such as designing simple household appliances, bridges, and paper airplanes and allow them to compete with each other
- Organized five events to help residents of retirement home with technical issues such as cell phones, email, and Facebook
- Participated in nonprofit, community-based organization to help children cope with life difficulties

## SKILLS

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**Office Suite:** Microsoft Office Word, Excel, Powerpoint, Access

**Programming and Design Software:** Matlab, C++, CATIA, Pro/E, Solidworks, Fortran

**FEA Software:** ABAQUS/CAE, Nastran, Hybermesh

**Spoken Languages:** Fluent in Chinese and English; Proficient in Japanese

## ADDITIONAL INFORMATION

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Participated in three month exchange program with Beijing University on full scholarship

Won five scholastic art awards and had ten artworks exhibited in museums, art shows, and school magazines

Enjoys half-marathons, table tennis, zumba and yoga classes