AUGUST "GUS" DOMEL

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EDUCATION

NORTHWESTERN UNIVERSITY Evanston, IL
Bachelor of Science in Mechanical Engineering June 2014
GPA: 3.99/4.00
Ranked #1 in McCormick School of Engineering Graduating Class
GRE: Quantitative: 170/170; Verbal: 158/170; Analytical Writing: 4.0/6.0
Relevant Courses: Finite Element Stress Analysis, Mechanical Vibrations, Dynamic Systems, Computer Aided Design, Fluid Mechanics, Thermodynamics, Design and Manufacturing, Engineering Analysis I-IV, Engineering Design and Communication I-II, Engineering Mechanics, Electronics Design, Computer Integrated Manufacturing, Machine Elements, Machine Dynamics

RESEARCH AND WORK EXPERIENCE

SOLID MECHANICS/COMPUTATIONAL LAB, *Research Assistant*, Northwestern (Dr. Wing Kam Liu) Sept. 2013 - Present
- Have completed and submitted a paper to be published discussing homogenized models for filled elastomers, allowing for quicker and more efficient relating, compared to previous models, of the microstructures of the elastomers to their damping properties
- Have performed research on nickel titanium shape memory alloys to better understand and be able to improve their ultra high cycle fatigue life

NEUROSCIENCE AND ROBOTICS LABORATORY, *Research Assistant*, Northwestern (Dr. Ed Colgate) May 2011 - Present
- Designed and built a device that uses multiple load cells to measure forces exerted by fingers when people explore surfaces, in order to develop next generation touch screens
- Researched the difference in a person's cognitive perception of a physical surface that is explored using only the index finger, as opposed to also using a thumb along with the index finger as part of a pinch grip

ARGONNE NATIONAL LABORATORY, *Research Assistant*, Lemont, IL Summer 2013
- Designed graphical user interface for a nuclear power plant, enabling diagnosis and management of plant malfunctions from a remote location
- Prepared extensive nuclear power plant analysis report based on 250 trial simulations run using graphical user interface
- Programmed sequences in Java and Python to diagnose reactor malfunctions and display results on graphical user interface

MOTOROLA SOLUTIONS, INC., *Mechanical Engineering Intern*, Schaumburg, IL Summer 2012
- Developed mockups of radio repeaters to verify cable assembly layout and spacing, and presented the results to team members for analysis and re-design
- Designed 5 different fixture plates and adapters for use by failure analysis team in compressive testing of mic housings
- Completed tolerance analyses to ensure parts of the different fixture plates and adapters would align
- Performed water immersion testing on radios to identify infiltration locations

MOTOROLA MOBILITY, INC., *Mechanical Engineering Intern*, Libertyville, IL Summer 2011
- Led failure analysis and re-design team for volume and power buttons of the *Droid Razr* cell phone and presented all re-design changes to mechanical, electrical, and chemical engineering divisions
- Performed deformation testing on *Droid Razr* batteries to determine the maximum damage that prevented their proper functioning
- Prescribed a suggested process of battery removal, based on deformation results, to avoid damage which would prevent continued use of the battery

ACADEMIC TEAM PROJECTS

- Designed Boeing oxygen mask deployment system to reduce the weight of the current system by 40%, while maintaining the same speed and reliability, and then presented the new design to Boeing system safety engineers
- Designed wine opener for Project Revolve that eliminates pain for those with arthritis and other disabilities of the wrist and presented design with video evidence to Project Revolve's marketing team
- Designed plastic toy spider injection mold to create several hundred toy spiders in a few hours

LEADERSHIP AND ACTIVITIES

- **ENGINEERS WITHOUT BORDERS,** *Co-Founder and Vice President* January 2013 - Present
  - Personally recruited over 30 members and 5 professional mentors for Northwestern Student Chapter
  - Lead design and financial preparations to begin first project in Kimuka, Kenya
- **MECHANICAL ENGINEERING UNDERGRADUATE ADVISORY BOARD**, *Member* Sept. 2012 - Present
  - Recommend and assist in the implementation of changes to mechanical engineering curriculum
- **NATIONAL HONORARY ENGINEERING FRATERNITY, TAU BETA PI**, *Member* April 2013 - Present
- **INTRAMURAL SPORTS (FOOTBALL, BASKETBALL, AND SOFTBALL)**, *Captain* Sept. 2010 - Present

SKILLS

- CAD: Solid Works, Unigraphics NX, and Pro/ENGINEER
- Programming: Java, Python, Matlab, and Mathematica
- FEA: Abaqus and Ansys
- Other: Design, Instron Tensile/Compressive Machine, MircoVu, Tolerance Analysis, and Laser Cutting