**Project Experience on Resumes**

Although the project examples are separated by major, the format and type of information can be applicable to all engineering disciplines.

**Biomedical Engineering**

***Notable Course Projects***

**Biomaterials**: Designed a polymer material test to investigate mechanical properties while increasing the polymer porosity.

**Advanced Biomechanics**: Investigated human motion, gait, and center of pressure using the Vicon biomechanics lab equipment and MATLAB to processes the data. Then used PowerPoint and Word to develop reports and presentations on the findings of the project.

**Senior Design**: Collected anthropometric data and data using Vicon biomechanics lab equipment, then using that data it is processed through MATLAB and the processed data helps design a lumbar support to help provide support to the lower back to decease stress in the vertebrae.

**Chemical Engineering**

***Notable Course Projects:***

* Directed the successful culture and subculture of a Chinese Hamster Ovarian (CHO) cell line for five generations using aseptic techniques, hemocytometer cell counts, and a Cell Titer-Blue viability assay.
* Initiated and implemented the freezing of live CHO cells in cryovials for the use of future lab students.
* Developed a method for kegging wine to reduce the amount discarded during the wine tasting process.
* Prepared and analyzed sodium iodate and sodium sulfite/citric acid solutions for their color-changing properties and use as the stopping mechanism for the AIChE ChE car competition at the 2016 National Convention.

**Civil Engineering**

**Project Experience**

* Designed and proposed a three level parking structure to alleviate the parking lot congestion issue for Trine University with a team of four engineering students.
* Utilized CAD in order to produce a housing division, including grading and elevation features.
* Competed with four classmates in the annual Institute of Transportation Engineers (ITE) Traffic Bowl.

**Computer Engineering**

***Project Experience:***

* Extensive experience with C based Embedded Systems
* Planned Verilog and VLSI Layout for 8-bit ALU logic
* Designed and implanted website using Ruby on Rails
* Various applications made using Java and C++

**Computer Science and Information Technology**

**PROJECTS**

**Vintage Foundation** *(Fall 20XX)* – **a consulting project in a nonprofit organization**

* Advised on new technologies to help further the organizational mission
* Instructed program director on building a user-friendly website and database
* Assessed systemic problems and suggested possible solutions

**News Delivery System** *(Spring 2014)* - **online information gathering system**

* Integrated old code with new for web application delivering custom tailored news
* Coded in Java using Model-View-Controller architecture

**Ebarter** *(Fall 2013)* **- an online bartering system running on Apache Tomcat**

* Applied software engineering principles along with J2SE Web Development Kit
* Led team in coding phase of development

**Design Engineering Technology**

**PROJECT EXPERIENCE:**

* Designed hub in SolidWorks with specific dimensions and tolerances
* Developed a speed reduction system and casing in SolidWorks
* Created a 3” iPhone prototype using SolidWorks
* Designed pressure sensor casing prototype using AutoCAD
* Generated an operating 6-bar mechanism

ENGINEERING EXPERIENCE

Manufacturing Materials and Systems

* Collaborated with a team to design an optical mount table
* Designed 10-20 pieces in SolidWorks
* Used Geometric Design and Tolerance to ensure the tolerances of each piece

Elements of Machines

* Calculated and selected an alternative material for a can crusher which caused the needed amount of force in FEM

CNC

* Created G-code to manufacture select design into a wide range of materials

**Electrical Engineering**

**Objective:** *Design validation of nonuniform sampling analog to digital converter chip*

* Conducted detailed testing, measurements and troubleshoot for validation of the design specifications
* Programmed SPI to calibrate the chip with correct voltage and current values
* Performed injection-locking using arbitrary function generators to stabilize clock frequency
* Collected nonuniform sampled data output from the chip using a data acquisition system: logic analyzer
* Developed MATLAB script to analyze the data and reconstruct the input signal

**Mechanical Engineering**

Projects:

* Designed mounting plate in SolidWorks for gear reduction housing; determined appropriate tolerances for unit
* Built six-bar mechanism from NX7 design to pour beverage into a cup
* Designed and machined wax mold for plastic part
* Increased stiffness of car chassis by adding custom roll cage
  + Ran FEA to determine efficiency
* Minimized scrapped parts by creating removable table to aid three-axis wire bending process

**Software Engineering**

***Notable Course Projects:***

* Built the circuit and coded six 9x9 LED squares to light up similar to a Rubik’s cube.
* Coded Teensy 2.0 ++ to communicate with a Bluetooth application and other Teensy 2.0 ++ to send serial character bytes and interpret the bytes correctly.
* Managed the team project to work together and complete parts for the design project on time and efficiently to meet a deadline.
* Designed and coded a website (https://thawing-beyond-8170.herokuapp.com/) with user and admin logins using Ruby on Rails to sell a product.
* Built and coded games, such as 2048, Dots and Boxes and Trivia using C++ and Java programming languages for class projects.
* Designed and coded a microcontroller to work as an oscilloscope with zoom features.