Sample Mechanical Engineering Resume – Freshmen/Sophomores

MANNY FACTURE

mfacture@andrew.cmu.edu

Current Address: SMC 123, 5032 Forbes Avenue, Pittsburgh, PA 15289 **Cell:** (412) 511-4422
Permanent Address: 21 School Avenue, New York, NY 10014

OBJECTIVE

To obtain a summer internship in the Mechanical Engineering industry that will utilize my analytical and leadership skills

EDUCATION

Carnegie Mellon University Pittsburgh, PA
Bachelor of Science in Mechanical Engineering, May 2017
Double Major in Engineering & Public Policy
Major GPA: 3.2/4.0 Overall GPA: 3.0/4.0

New York High School New York, NY
High School Diploma, June 2013
GPA 3.82/4.0

PROJECTS

Mechanical Crane Project, Spring 2015
- Designed a mechanical crane using a truss structure to lift a weight to a pre-determined height, with size, stress and weight constraints
- Collaborated in a team by combining ideas to obtain a practical concept for the task

Mousetrap Car Project, Fall 2013
- Built a small vehicle to carry a can of soda ten feet as fast as possible with only the power of a Mousetrap
- Reached the finals of the competition by working with the team to improve our design

Computer Aided Wrench Design, Fall 2013
- Designed an aluminum wrench using Creo Pro/E and analyzed the design for stress concentrations with ANSYS
- Combined metal working skills with a CNC milling machine to produce prototype wrench

WORK EXPERIENCE

Career and Professional Development Center (CPDC), Carnegie Mellon University
Student Receptionist, Summer 20014-present
- Answer telephone and route calls as appropriate
- Complete projects for CPDC staff, such as organizing data on spreadsheets

Happy Summer Camp Springfield, NJ
Camp Counselor, Summer 2013
- Created and coordinated activities for ten campers 10-12 years old
- Negotiated disputes between campers and helped to set-up for parents weekend

LEADERSHIP

Vice-President, American Society of Mechanical Engineers (ASME), Spring 2014-present
- Organize monthly speaker series, which has seven corporate and alumni presenters

SKILLS

Software: Microsoft Office, MATLAB, Solidworks, Creo Pro/E, Autodesk Inventor
Machines: Mill, Lathes, Drill Press, Band Saw
Language: Fluent in Spanish; Conversant in French

ACTIVITIES

Alpha Phi Omega Service Fraternity, Fall 2013-present
Intramural Sports: Softball, Volleyball, Fall 2013-present
American Society of Mechanical Engineers (ASME), Spring 2014-present
Orchestra, New York High School, 2009-2013

HONORS

College of Engineering Dean's List (GPA 3.75 and above), Fall 2013
National Honor Society, New York High School, 2013

Sample Mechanical Engineering Resume – Juniors/Seniors

MANNY FACTURE

Current Address: SMC 123, 5032 Forbes Avenue, Pittsburgh, PA 15289
Permanent Address: 3521 Second Avenue, Westford, MA 01881
Email: mfacture@andrew.cmu.edu **Cell:** 412.111.2222

EDUCATION

Carnegie Mellon University Pittsburgh, PA
Bachelor of Science in Mechanical Engineering, May 2015
Double Major in Biomedical Engineering
Overall GPA: 3.0/4.0

RELEVANT EXPERIENCE

Procter & Gamble Manufacturing Company Lima, OH
Engineering Intern, Summer 2014

- Conducted line trials to determine plant capability and made recommendations for noise mitigation
- Implemented a daily management system for managing scrap in order to reduce weekly accumulation
- Commended by supervisor for completing projects 3 weeks ahead of schedule

PROJECTS

Suitcase with Vacuum Pump, Design II, Fall 2014

- Developed and built a suitcase with a vacuum pump that removed excess air to increase packing capacity by up to 50%, allowing travelers to bring more personal items per trip

Temperature Controlled Shipping Unit, Spring 2014

- Designed and analyzed with FEA a shipping container that can bring a biospecimen container to 4°C within 10 minutes
- Devised the system such that it is functional in 60°C ambient temperature

Swinging Gripper, Design I, Spring 2014

- Led a team of 5 people to create a robotic gripper that used a small motor torque to hold onto a billiards ball through one full swinging motion
- Constructed a 3D representation of the gripper in SolidWorks and ran stress simulation on the model

Astronaut's Coat Rack, Design I, Spring 2014

- Designed a coat rack with mass and support constraints to sustain a load in space
- Succeeded in creating a design that could carry three times the required load with an acrylic structure that weighs less than 10 grams.

Head Mechanic and Buggy Chairperson, Pi Kappa Alpha Fraternity, 2013 – present

- Customized and built a gravity racer, out of composite materials, for annual University racing competition
- Created and manufactured all steering, braking and mounting components
- Decreased race time by more than 5 seconds with design of new steering

RELEVANT COURSES

Manufacturing Sciences	Mechanical Systems Experimentation	Microfluidics
Computer-Aided Design	Engineering Statistics and Quality Control	Engineering Graphics
Computer-Aided Engineering	Cellular Biomechanics	Fuel Cell Systems

LEADERSHIP

Vice-President, Tau Beta Pi (National Engineering Honor Society), Spring 2014 – present

- Plan outreach events in the Pittsburgh area to bring awareness to the importance of STEM
- Motivate the 60 members to attend meetings and organize events

ADDITIONAL EXPERIENCE

Carnegie Mellon University Pittsburgh, PA
Desk Attendant, Fall 2012 – Spring 2013

- Checked students' identification to ensure the safety of the residence hall students

SKILLS

Software: Microsoft Office, MATLAB, Solidworks, Creo Pro/E, Autodesk Inventor, ANSYS, ADAMS
Machines: Mill, Lathes, Drill Press, Band Saw
Spoken Languages: Fluent in French; Conversant in Spanish

ACTIVITIES & HONORS

Pi Kappa Alpha Fraternity, 2012 – present
Men's Track and Field Team, Carnegie Mellon, 2012 – present
American Society of Mechanical Engineers (ASME), 2012 – present
Pi Tau Sigma (National Mechanical Engineering Honor Society), 2014 – present
College of Engineering Dean's List (GPA 3.75 and above), Fall 2012, Spring 2013

MANNY FACTURE

Current Address: 123 Hobart Street, Apt #19, Pittsburgh, PA 15217
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EDUCATION

Carnegie Mellon University Pittsburgh, PA
Master of Science in Mechanical Engineering, May 2015
GPA: 3.51/4.0

Cornell University Ithaca, NY
Bachelor of Science in Mechanical Engineering, May 2014
GPA: 3.2/4.0

RELEVANT EXPERIENCE

Ford Motor Company Dearborn, MI
Summer Intern, Summer 2014

- Developed laboratory methodology to assess vehicle launch acceleration while at non-STP environmental conditions, and correlated results to physical on-road tests and current analytical methods
- Refined analytical process to verify Vmax and correlated to on-road physical tests

General Electric Transportation Erie, PA
Engineering Intern, Locomotive Fuel Systems, Summer 2013

- Provided support for fuel reliability issues: leak/failure analysis, reliability testing, and design changes
- Facilitated new product introduction and prototype development: strain gauge and vibration validation
- Coordinated communication between the field, test labs, offsite facilities and international teams/suppliers

PROJECTS

Automobile Seat Release Mechanism Design, Fall 2014

- Designed plastic parts and metal parts as components for the seatback release mechanism in Autodesk Inventor
- Revised plastic part for large-volume injection molding and other components using DFM & DFA methods

Biomedical Engineering Design – Mobility Device, Spring 2014

- Remodeled existing technology to create a novel mobility assist device for wheelchair users
- Modeled device to increase the independence of users and to reduce the cost

Biomechatronics – Robotics Prosthetic Arm, Fall 2013

- Adapted mathematical models and then assembled a working robotic arm to grab and place objects

Swinging Gripper, Design I, Spring 2013

- Led a team of 5 people to create a robotic gripper that used a small motor torque to hold onto a billiards ball through one full swinging motion
- Constructed a 3D representation of the gripper in SolidWorks and ran stress simulation on the model

RELEVANT COURSES

Energy System Modeling	Math Techniques in Engineering	Computer Vision
Computer-Aided Design	Bio-Inspired Robotics	Engineering Computation

LEADERSHIP

Vice-President, American Society of Mechanical Engineers (ASME), Fall 2013 – Spring 2014

- Organized monthly speaker series, which has seven corporate and alumni speakers
- Motivated the 75 members to attend meetings and coordinate events

SKILLS

Software: Microsoft Office, MATLAB, Solidworks, Creo Pro/E, Autodesk Inventor, ANSYS, ADAMS
Machines: Mill, Lathes, Drill Press, Band Saw
Spoken Languages: Fluent in French; Conversant in Spanish

ACTIVITIES & HONORS

American Society of Mechanical Engineers (ASME), 2011 – present
Pi Kappa Alpha Fraternity, 2011 – 2014
Volunteer, Philippines Service Project: repaired damaged houses, Summer 2011
Men's Track and Field Team, Cornell University, 2010 – 2014
Undergraduate Teaching Fellow, Fluid Mechanics, Numerical Methods, 2012 – 2013
Pi Tau Sigma (National Mechanical Engineering Honor Society), 2013 – present
College of Engineering Dean's List (GPA 3.75 and above), Fall 2012, Spring 2013

Sample Mechanical Engineering Resume – PHD

Manny Facture

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OBJECTIVE

To obtain a full-time position in the field of research utilizing my experience and skills in numerical (computational), analytical modeling and simulations, system level designs, problem-solving and communication.

EDUCATION

Carnegie Mellon University, Pittsburgh, PA
Ph.D. Mechanical Engineering, GPA: 3.85/4.0 — Expected December 2015

Shanghai Jiao Tong University, Shanghai, P.R.China
M.S. Mechanical Engineering, Major GPA: 3.7/4.0 — May 2010
B.S. Mechanical Engineering, Major GPA: 3.8/4.0 — May 2009

RESEARCH EXPERIENCE

Carnegie Mellon University, Research Assistant, Fall 2011 – present

Computational and Analytical Modeling of Biofluidic Lab-on-a-Chip Systems

Model for turn geometry-induced dispersion in electrophoretic separation microchips
- Analyzed the turn geometry induced skew and band broadening of analyte bands in microchannels.

Model for Joule heating (JH) dispersion in electrophoretic separation microchips
- Presented a JH dispersion model that holds in all convection-diffusion regimes in microchannels, which is useful to design ultra-fast and high electric field electrophoresis microchips.

Model for electrokinetically (EK) driven passive mixers and mixing networks
- Developed generalized models for micromixers and complex mixing networks.

System Level Simulation and CFD Analysis of Biofluidic Lab-on-a-Chip Systems

System simulation and CFD analysis of complex electrophoretic separation microchips
- Designed system simulations of complex electrophoresis microchips (multi-turns serpentine, spiral or both) in Cadence using Verilog-A, validated by CFD analysis involving steady-state electrostatics and Navier-Stokes equations and transient advection-diffusion equation.

System simulation and CFD analysis of EK passive mixers and mixing networks
- Created system simulation of complex EK passive mixers, validated by CFD analysis involving steady-state electrostatics, Navier-Stokes and advection-diffusion equations.

PROFESSIONAL EXPERIENCE

CFD Research Corporation — Huntsville, AL
Intern, CFD Analysis and Software Development, Summer 2012
- Analyzed the model sample transport and reaction in biofluidic chips and develop “Drag & Drop, Mixed-Methodology-Based Lab-on-a-Chip Design Optimization Software”.

Mission Research Corporation — Nashua, NH
Software Developer, 2010-2011
- Collaborated to develop a system simulation software “Microfluidic Simulation Toolkit”

TEACHING EXPERIENCE

Carnegie Mellon University Pittsburgh, PA
Teaching Assistant, Fall 2011

- Instructed Computational Dynamics course
- Held weekly office hours and graded problem sets and tests

RELEVANT COURSES

Mechanics: Dynamics, Kinematics, Mechanics of Material, Engineering Materials
Thermo-fluid: Thermodynamics, Advanced Heat Transfer and Mass Transfer, Fluid Mechanics, Fluid Machinery, Aerodynamics, Cryogenics, Air Conditioning System, Vacuum Pumps
Computing: Numerical Techniques in Mechanical Engineering, Computational Fluid Dynamics (CFD)
BioMEMS: Introduction to MEMS, BioMEMS, NanoRobotics, Physical Chemistry

COMPUTER SKILLS

Programming Languages:	Verilog-A, C/C++, Visual C++, Matlab, Fortran, Mathematica
Layout Design Software:	Cadence Virtuoso, Coventorware Catapult
Optimization/Synthesis Tools:	NeoCircuit, Matlab, Mathematica
Circuit/System Software:	Cadence-Affirma/Spectre, Coventorware-ARCHITECT/Saber, Simulink
Numerical Solvers:	Coventorware, Femlab, CFD-ACE, Fluent, Adams/AView
Mathematical Packages:	Matlab, Mathematica, Maple
CAD Software:	SolidWorks, Creo Pro/E, CoventorWare

SELECTED PUBLICATIONS

Journal Publications:

M. Facture, Q. Lin and T. Mukherjee, "A Model for Complex Electrokinetic Passive Micromixers", *Lab-on-a-chip*, 2014 (accepted).

M. Facture, Q. Lin and T. Mukherjee, "Composable Behavioral Models and Schematic-Based Simulation of Electrokinetic Lab-on-a-Chips", *IEEE TCAD* 2013 (accepted).

M. Facture, Q. Lin and T. Mukherjee, "System-Oriented Dispersion Models of General-Shaped Electrophoresis Microchannels", *Lab-on-a-chip*, 2012, Vol. 4, pp. 453-463.

M. Facture, Q. Lin and T. Mukherjee, "A Model for Joule Heating-Induced Dispersion in Microchip Electrophoresis", *Lab-on-a-chip*, 2012, Vol.4 pp. 625-631.

Conference Publications:

M. Facture, R. Magargle, Q. Lin, J.F. Hoburg and T. Mukherjee, "System-Oriented Modeling and Simulation of Biofluidic Lab-on-a-chip", Transducer'05, pp. 1280-1283, June 5-9, 2013, Seoul, Korea.

M. Facture, Q. Lin and T. Mukherjee, "System Simulations of Complex Electrokinetic Passive Micromixers", MSM'05, pp. 579-582, May 8-12, 2013, Anaheim, CA.

M. Facture, Q. Lin and T. Mukherjee, "Applications of Behavioral Modeling and Simulation on Lab-on-a-chip: Micro-Mixer and Separation System", *BMAS'04* (IEEE), pp. 1-6, Oct. 21-22, 2012, San Jose, CA.

HONORS

Referee for "*Journal of Micromechanics and Microengineering*", 2011-present
Hot Article of *Lab on a chip* (Royal Society of Chemistry), "System-Oriented Dispersion Models of General Shaped Electrophoresis Channels, 2012
Best Poster Award, Microfluidic/Biosensor Workshop at the University of Pennsylvania, 2012
National Excellence Scholarship, Shanghai Jiao Tong University, P.R. China, 2008