Michael Sobrepera

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Profile

Engineering professional with strong biomedical engineering and computer science educational background complemented by work experience involving product development and manufacturing. Effective at combining creative thinking with logical design ideas to develop solutions to challenging and novel problems. Excellent verbal and written skills with a detail-oriented approach for completing projects and assignments. Thoroughly enjoys learning and applying new skills and talents to problems.

Education

Georgia Institute of Technology; Atlanta, GA

- Bachelor of Science in Biomedical Engineering (2015 planned); GPA: 3.29
    - Minor in Computer Science – Focus on Intelligence

Auburn University Honors College; Auburn, AL (2011-2012)

- Pursued Bachelor of Science in Chemical Engineering; GPA: 3.90

Skills

Technology

- Programs: GIMP, HSMWorks, Inkscape, Mathematica, Microsoft Office Suite, MS Visio, SolidWorks
- Languages: C, Java, LaTeX, Matlab, V+, ladder logic, LabVIEW, Python

Product Development/Manufacturing

- Traditional Machining: manual mill, manual lathe, 2+1 CNC mill, manual drill press, deburring techniques, finishing tools
- Rapid Prototyping: FDM printers, and RTV molding
- Product Design: design for manufacture, technical drawing, GD&T, design for injection molding, design for thermoforming
- Manufacturing: SCARA robotics, tooling design, automation design

Work Experience

Georgia Institute of Technology, TEP Machine Shop; Atlanta, GA (Aug 2014 – May 2015)

- Position: Machine Shop Supervisor
- Responsibilities: Maintain equipment, train shop users, guide MBID (Masters in Biomedical Innovation and Development) students in design and prototyping, support Cardiovascular Fluid Mechanics Lab and Tissue Mechanics Lab.

Unilife Corporation; York/King of Prussia, PA (Jan 2014 – Jul 2014)

- Position: Product Development Engineering CO-OP
- Responsibilities:
    - Developed procedure for rapidly testing design iterations using a hand powered injection molding machine.
    - Analyzed and modified product components and assemblies to improve final product outcomes, including problem assessment, design changes, prototype production, prototype testing, and submittal for final design review.
    - Designed, installed, and programmed automation tooling for the testing, manufacturing, and finishing of injectable drug delivery devices, including applications in micro injection molding, gluing application, and small scale vacuum stoppering.
    - Independently developed and sourced custom product packaging materials from foreign supplier.
    - Independently developed and sourced custom thermoformed components from domestic supplier.
    - Sourced majority of custom components for pilot production (30 ppm) line, including BOM generation, drawing organization, RFQs, quote selection, and vendor relations.
    - Designed and sourced safety/airflow enclosures for pilot production line.
    - Supported team in other projects.

Georgia Institute of Technology, MBID Program; Atlanta, GA (Fall 2013)

- Position: Shop Hand
- Responsibilities: Set up new machine shop for MBID program, including ordering, set up, and maintenance of equipment, along with equipment testing to determine further shop needs.

Georgia Institute of Technology, CFM Lab; Atlanta, GA (Fall 2013)

- Position: Undergraduate Designer
- Responsibilities: Designing, prototyping, and refining tricuspid annuloplasty device.

Cobb County School District, Kennesaw Mountain High School; Kennesaw, GA (Summer 2012)

- Position: Custodian
- Responsibilities: Cleaning floors, tables, desks, bathrooms, etc… removing trash, stripping floors, waxing floors

Emory-Adventist Hospital Anatomic Pathology Lab; Smyrna, GA (Fall 2010)

- Position: Histotech, Intern
- Responsibilities: Processing specimens (grossing, embedding, cutting, and staining), researching *H. pylori* (bacteria) community prevalence and incidence.

Metairie Diabetes Metabolic Clinic; Metairie, LA and LaPlace, LA (Summer 2010)

- Position: Medical Assistant, Administrative Assistant
- Responsibilities: Triaging (taking vitals, drawing blood, checking patients' medications), coding for insurance billing, collecting payment, answering phones.

Relevant Coursework:

- BMED 1300 (*Problems in Biomedical Engineering I*) – Project based, focus on research, experimental design, and systems modeling
- BMED 2210 (*Conservation Principles in Biomedical Engineering*) – Principles of mass and energy conservation and process analysis
- BMED 2300 (*Problems in Biomedical Engineering II*) – Principles of engineering design and manufacturing through problem based learning. Focused on a small group redesign project for the vaginal speculum
- BMED 3100 (*Systems Physiology*) – Introduction to human physiology
- BMED 3300 (*Biotransport*) – Advanced mass transfer, heat transfer, and fluid mechanics along with reaction kinetics. Comparable material to chemical engineering transport classes
- BMED 3400 (*Introduction to Biomechanics*) – Introduction to mechanics and deformable bodies. Focus on application to biomedical engineering, but comparable to mechanical engineering deformable bodies and mechanics class
- CS 1371 (*Computing for Engineers*) – Fundamentals of problem solving with computers, focus on logic, using Matlab
- CS 1331 (*Intro to Object Oriented Programming*) – Fundamentals of Object-Oriented Programming, using Java
- CS 2110 (*Computer Organization and Programming*) – Introduction to computer systems from transistors through C. Emphasis placed on logic circuits/structures, Assembly, and C.
- MSE 2001 (*Principles and Applications of Engineering Materials*) – Fundamentals of material design and use, with an emphasis on engineering applications
- ECE 3710 (*Circuits and Electronics*) – An introduction to electric circuit elements and electronic devices and a study of circuits containing such devices
- CS 3600 *(Introduction to Artificial Intelligence)* – An introduction to artificial intelligence and machine learning. Topics include intelligent system design methodologies, search and problem solving, supervised and reinforced learning.
- CS 3630 *(Introduction to Perception and Robotics)* – Covers fundamental problems and leading solutions for computer and robot perception and action from the point of view of autonomous robot navigation.
- BMED 4602 *(Capstone Design)* – Team-oriented design project in biomedical engineering, incorporating engineering standards and realistic design constraints. Includes introduction to relevant regulatory, intellectual property, and business management topics.
- ECE 2026 *(Introduction to Signal Processing)* – Introduction to discrete-time signal processing and linear systems. Sampling theorem, filtering, frequency response, Discrete Fourier Transform, Z-Transform. Laboratory emphasizes computer-based signal processing.