Francis Gold Sy

francisgold.sy@gmail.com | (917) 327-0322 | francisg-sy.me | linkedin.com/in/francis-gold-sy/

EDUCATION ——————————————————————————————————————

City University of New York, City College   **Expected Grad:** *June 2022*
Major: B.E., Mechanical Engineering; Minor: Computer Science   *GPA: 3.84*

PROFESSIONAL SKILLS ——————————————————————————————

Software: Siemens NX, SolidWorks, Fusion 360, MATLAB, Arduino, Java, Python, Gazebo, R.O.S.
Manufacturing*:* FDM & SLA 3D Printers, Laser Cutter, Prototyping, Design for Manufacturing

EXPERIENCE ——————————————————————————————————————

Biomechatronics and Intelligent Robotics Lab, CCNY   *Oct 2020 – May 2021*
Undergraduate Research Assistant
• In a team of two, simulated different configurations of a servo-actuated foldable robot using Gazebo and R.O.S. Fine-tuned Gazebo's PID gains to accurately actuate 8 and 22 active joints and closely mimic reality.
• Created custom URDF files comprising of a parallel robot configuration with fine-tuned physics parameters
• Programmed custom python scripts to enable keyboard control using Gazebo's Joint Position Controllers. Used python's Tkinter library to create a user-friendly control panel.
• Programmed MATLAB scripts using ROS and Parallel Computing toolbox to efficiently execute different robot configurations. Achieved locomotion through weight redistribution of servos.
• Utilizing Gazebo and R.O.S. in an Ubuntu workspace along with GitHub and Jira into the project workflow

WearWorks Inc, NYC
Mechanical Engineering Intern   *Jan 2020 – Aug 2020*
• Collaborated in a team of three to design, iterate, and prototype a haptic smartwatch for manufacturing
• Reduced manufacturing costs by integrating design feedback from injection molding companies
• Conducted plastics and stress simulations in SolidWorks to optimize product for manufacturing
• Managed DFMEA, PFMEA, process flow chart, and other manufacturing-related documents
• Identified and communicated with promising U.S. and overseas suppliers for B.O.M. needs
• Ideated and modeled different versions of packaging for the company product

Zahn Innovation Center, CCNY   *Feb 2019 – May 2020*
Engineering Apprentice
• Using SolidWorks, Fusion 360, 3D printers, and laser cutter for various projects and design applications
• Executed design of various client-requested products through small team collaboration
• Experienced in the use and maintenance of FDM and SLA 3D printers
• Designed, iterated, and delivered a multi-accessory K-8 mathematical learning apparatus to an outside client

DogSpot Inc, NYC   *June 2019 – Aug 2019*
Engineering Intern
• Supported circuit board production through wire prep, soldering, and board assembly
• Managed circuit board materials and maintained hardware inventory
• Streamlined circuit board production through documentation of assembly and troubleshooting processes
• Maintained strong communication with assembly team to ensure deadline completion and smooth workflow

VOLUNTEER ——————————————————————————————————————

NASA L'Space Mission Concept Academy   *May 2021 – Present*
Deputy Project Manager
• In a team of 9, developing a mission concept in a two-month timespan that analyzes the lunar surface PSRs for water-ice to an accuracy of 1 degree and spatial sampling of 100 meters.
• Writing and thoroughly developing a Preliminary Design Report comprised of NX CAD models of an EDL lander and lunar rover, Gantt charts, FMEAs, risk matrices, and orbital/instrumental calculations
• Leading weekly team and sub-team meetings and workshops to set and accomplish weekly objectives

ACCOMPLISHMENTS ————————————————————————————————

• May 2021: Pearl Tsung Memorial Awardee for outstanding performance in mechanical engineering
• September 2019: S Jay Levy Fellow – a selective year-long professional development experience