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:** *Dec 2022*
Major: B.E., Mechanical Engineering; Minor: Computer Science — *GPA: 3.84*
Interim Secret Security Clearance — *Active: Feb 2021 - Present*

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

Northrop Grumman — *June 2021 – Present*
Mechanical Engineering Intern
• Designing test fixtures using NX that interface with electromechanical components and assemblies. Using Product Lifecycle Management software to support ongoing projects and integrate design improvements.

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/R.O.S. Fine-tuned Gazebo's PID controller to precisely actuate 8 and 22 active joints.
• Created URDF files comprising of parallel robot configurations with fine-tuned physics parameters.
• Developed python scripts that interfaced with Joint Position Controllers to enable keyboard control. Applied python's Tkinter library to create a user-friendly control panel.
• Programmed MATLAB scripts using ROS and Parallel Computing toolbox to efficiently execute different configurations. Achieved locomotion through weight redistribution of servos.

WearWorks Inc, NYC
Mechanical Engineering Intern — *Jan 2020 – Aug 2020*
• In a team of three, design, prototyped, and iterated the WayBand, 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
• Contacted and identified U.S. and overseas suppliers (curing ovens, dispensers, etc.) for B.O.M. needs

Zahn Innovation Center, CCNY — *Feb 2019 – May 2020*
Engineering Apprentice
• Used SolidWorks, Fusion 360, 3D printers, and laser cutter for various projects and design applications
• Designed, iterated, and delivered a multi-accessory K-8 mathematical learning apparatus to an external client
• Reinforced understanding of Agile principles through small team collaboration and external client meetings

DogSpot Inc, NYC — *June 2019 – Aug 2019*
Engineering Intern
• Supported circuit board production through wire prep, soldering, board assembly, and inventory management
• 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 mission concept that analyzes lunar surface PSRs for water-ice to ±1% accuracy
• Writing and thoroughly developing a Preliminary Design Report comprising of NX models of an EDL lander and lunar rover, Gantt charts, FMEAs, risk matrices, and orbital/instrumental calculations

ACCOMPLISHMENTS

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