Phoebe DeGroot

Art - Engineering - Fabrication - Creative Technology
Brooklyn, NY 617 230 5209 Pdegroot@pratt.edu

Education

Smith College
B.S. Engineering Science, Minor in Studio Art 2013
Cumulative GPA: 3.66 Elected Sigma Xi 2013 Dean's List: 2009-2013
Awarded Highest Honors for Dept. Thesis: *A DfX Guide for Engineering Students*
Teaching Assistant: Engineering 100, Logic 100, Applied Design + Prototyping

Experience

The Consortium for Research and Robotics- Pratt Institute
Project + Technical Coordinator Oct 2019 - Present
Coordinates projects pursuing the development of new applications for industrial robotics across fields of design, art, education and human-machine interaction.
- Trains and supports academic researchers, professional residents, and industry partners in safe operation, setup and development of industrial robotics projects
- Manages student employees to advance ongoing research projects
-Spear-headed new research initiatives in using embedded systems, adaptive programming and developing workflows to make industrial robots more accessible to new non-technical users such as Pratt and STEM Program students
- Performs daily production, administrative and maintenance tasks at the CRR
- Maintains production shop, designs and fabricates robotic tooling and fixtures

Pratt Institute
Instructor - Interdisciplinary Studies Fall 2021- Ongoing
Instructed a cohort of undergraduate Pratt students from a variety of majors in the use of industrial robot arms as an interdisciplinary creative medium
- Designed the syllabus, assignments, projects and lecture materials for teaching in both in person and virtual modalities
- Covered topics such as digital fabrication, robotic programming and the engineering design process using conceptual discussion and hands on assignments
- Met departmental outcomes for student learning and management of class

RUSHDesign
Lead Machinist/ Design Engineer May 2015 - Dec 2019
Head of production at the Brooklyn shop providing design, CNC machining and end-to-end production for prototype and small-volume manufacturing projects.
- Met with clients across a wide range of disciplines including astrophysics labs, architects, high-end lighting design studios and independent inventors to interpret their needs and determine project deliverables, timeline and budget
- Worked directly on projects in project management, 3D modeling, design development, CNC programming, machine operation and finishing
- Coordinated outside sub-contractors to facilitate material purchase, production and finishing services, installation and shipping logistics
- Managed fabrication employees and performed regular shop maintenance
- Trained five full-time fabrication employees on maching programming, design and fabrication concepts and project management

Experience Continued

ITP Camp - NYU
Workshop Instructor + Participant — Summer 2019

Participated in ITP workshops around the creative use of technology as both student and instructor, culminating in a final group exhibition.
- Organized and taught two workshops for a total of ~40 participants *3D modeling in Fusion 360* and *Concept to Object: Designing for Fabrication*
- Participated in final exhibition with *Automated Automatism:* a series of drawings exploring machine interpretation of emotion created through a my collaboration with a collection of image-processing algorithms and a CNC router

EpiVax
Business and Science Associate — Sept 2013-August 2014

Worked cross-departmentally between immunology researchers, programmers and sales associates to develop informational and promotional materials for EpiVax's immunoinformatics projects.
- Represented EpiVax at events and scientific conferences in the US and Europe
- Traveled to business and academic research partners to facilitate video meetings
- Participated in various supportive roles in promoting events, applying for grant funding, creating informational graphics and coordinating client relationships.
- Organized a study group with programming, sales and other non-immunology employees so as to better understand the research and services at EpiVax

Awards and Certifications

CoVent-19 Ventilator Design Challenge
Winner - Team SmithVent — Summer 2020

Our team of 25+ Smith Alums coordinated remotely to design a low-cost emergency ventilator in just one month. After being selected as one of 7 finalists from over 200 entries we further refined, prototyped and tested our design over the next 5 weeks, ultimately winning the design challenge. I led the design + modeling team - where we worked in week long sprints to bring together electronic components, pneumatic control, user experience and medical requirements into one cohesive design.

Self-Centering Labyrinth Seal
Design Patent US9903477B2 — Published Jan 2016

A novel design for a labyrinth-style impeller seal for centrifugal gas compressors that self-adjusts to contain leaking gas. This design was created and developed as part of my engineering capstone project and honors thesis.

EIT License
Board of Massachusetts NCEES ID 14-353-13 — Awarded 2013

Skills

Design and Modeling
Fusion 360, Solidworks, Rhino + Grasshopper, RobotStudio, MasterCAM, Powermill, KiCAD, TinkerCAD, Blender

Fabrication
6 Axis Robotics, CNC Mill + Router, FDM Printing, CO2 Laser, Waterjet, Manual Mill + Lathe, MIG + TIG Welding, Electronics Soldering + Assembly, General Wood + Metal Fabrication and Finishing Techniques

Programming
RAPID, C++/Arduino IDE, Processing/ P5.js, MicroPython, Matlab

Visual Art
Adobe Photoshop, Illustrator + InDesign, Ceramics, Traditional media and sketching