**Coralien (Cory) Langreney**

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EDUCATION

**Columbia University, New York, New York** ExpectedMay 2020

Bachelor of Science, Electrical Engineering Major

GPA: 3.42/4.0

**College of the Holy Cross, Worcester, MA** May 2018

Bachelor of Arts, Physics Major and Computer Science Minor

GPA: 3.34/4.0

TECHNICAL SKILLS

**Computer Skills/Languages:** C++, Java, C, Matlab, Python, SolidWorks, Arduino, Mathematica, MIPS Assembly, Microsoft Office Suite

**Languages:** Fluent in French, familiar with Italian and Spanish

RESEARCH AND INTERNSHIPS

**Research Assistant, Department of Perinatal Imaging & Health,** King College London Summer 2018

* Developed a proof of concept for a clinical dashboard in an intensive care unit
* Created data validation algorithms as part of an extraction, transform, and load

to identify anomalies in data for it to be corrected

* Helped on the 3D mapping and user interface end of the iFIND project

**Research Assistant, Department of Biomedical Engineering,** Imperial College LondonSummer 2018

* Assisted on a cable-driven robot called NED (Neuromechanics Evaluation

Device) to perform fast and strong interaction force to identify joint impedance

and muscle reflexes

* Enhanced laser security system of NED
* Supported in specific calibrations and created structural adjustments to NED

**Quality Control Biochem/ImmunoAssay Intern at Novavax Inc** Summer 2016**,** Summer 2015

* Obtained training on how to run ELISAs in the laboratory
* Developed a cost analysis project for the new laboratory building
* Underwent rigorous training to perform Assays such as ELISA’s, Gel Page, Absorption, SRID
* Conducted Immuno Assay comparison study/research (Project involved material prohibited from public dissemination)

COMMUNITY SERVICE

**The Salvation Army**,Worcester, MA Fall 2016- Summer 2018

* Volunteer at a local soup kitchen

**Nativity School of Worcester**,Worcester, MA Fall 2015- Summer 2016

* After school tutoring for students of the Nativity School

**St. Mary’s,** Worcester MA Fall 2014- Summer 2015

* Volunteer at St. Mary’s elderly home

**Namibia 2013 team** Fall 2012-Summer 2013

* Member of the Namibia team that helped raised $70,000 for the Kurenhoas Orphanage
* Participated in a one-month service trip to Namibia in June 2013.

LEADERSHIP AND AWARDS

**Candidate of the Duke of Edinburgh Gold Award** Fall 2012 - Summer 2014

* Program included 18 months of physical activities (including expeditions in Wales), 12 months of volunteer work and 6 months of learning a new skill.

**Holy Cross and Columbia Club Volleyball** (Captain) Fall 2014- Present

* Manage, organize and run the Men’s Holy Cross and Columbia Club Volleyball Team

COMPUTER PROGRAMMING AND ROBOTICS PROJECTS

* **Egg Collector Robot:** Designed, created, and programmed a robot that was able to intake many objects using a rotating sweeper to transport the objects to various different drop off points at different height levels. The robot was controlled by a bluetooth controller that we programmed and was able to preform specific tasks autonomously.
* **Hazardous Waste Robot:** Created and programmed a robot that would be able to transport and handle hazardous materials autonomously to different allocated locations using various sensors.
* **Mine Detector Robot:** Designed, created, and programmed a small robot that would detect and maneuver its way safely through a emulated minefield using various hall sensors while maintaining the set path that was initially given to reach a set destination.
* **Light Detector Robot:** Created and programmed a robot that was able to find its way out of any dark room by tracking the light source around it using multiple photoresistors while checking its surroundings.
* **Bipolar and Unipolar Motor:** Programmed in C, using a microcontroller chip, a unipolar and bipolar motor in a case study which contains multiple modes and functionalities.
* **State Machine Solenoid:** Implemented a state machine case study with a solenoid and microcomputer board by programming a microcontroller in assembly code.
* **Proxy Server:** Programmed a local proxy server using TCP in Python.
* **UDP Data Transport:** Programmed reliable transport protocol over UDP that provides in-order and reliable delivery of UDP datagrams in the presence of packet loss, delay, duplication, and re-ordering.
* **Pipeline:** Designed, created and programmed my own unique pipeline in C.
* **Minesweeper game:** Programmed the game of minesweeper with my own personal theme to the game in Java.
* **Greyscale:** Created a program that would reformat pictures pixel by pixel to greyscale format in Java.
* **Polynomial Calculator:** Created a program that would act as a polynomial calculator in C++.
* **Maze Solver:** Created a program in C++ that solved any type of maze that the user would make.
* **Data Base:** Programmed a data base of schools that would output and rank top 5 schools based on preferences and input criteria in C++.
* **PACMATH:** Designed a fun and educational mathematics learning game for children in Solidworks

MAJOR/MINOR RELATED CLASSES

**Physics**: General Physics 1 & 2, Methods of physics, Modern Physics, Electronics, Classical Mechanics, Quantum Mechanics, Electromagnetic Theory, Robotics, Thermal Physics.

**Computer Science**: Techniques of Programming, Data Structures, Computer Systems and Organization, Operating Systems, Computer Graphics and Design, Computer Networks.

**Electrical Engineering**: Introduction to Electrical and Computer Engineering, Probability for Engineers, Signals and Systems, Circuit Analysis, Solid State Devices-Materials, Electronic Circuits, Mechatronics and Embedded Microcomputer Control.