# Glyn Finck

B.A.Sc in Engineering Physics

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## Skills

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| **Languages** | Python,C++, Java, TypeScript, JavaScript, C |
| **Frameworks** | Django, ROS, Tornado, Angular |
| **Databases** | Oracle,MySQL, neo4j |
| **Technologies** | HTML5/CSS3/Bootstrap4,REST API,Unreal Engine 4,Swagger API,cx_Oracle,NetBox,Docker,ROS,Arduino,NVIDIA Jetson,Realsense,YOLOv3 |
| **Development tools** | Ubuntu, VisualStudioCode, Git, GitHub,MATLAB |
| **Electrical** | PCB Circuit Fabrication, Serial Control of Micro-controllers, Field Programmable Gate Array, Oscilloscope |
| **Mechanical** | General Mechanical Design, Solid-works, Onshape |

## Projects

### Misty West

Exploration of Edge-Computing for Autonomous Robots

- Developed an autonomous robot showcasing the power of edge-computing platforms such as the NVIDIA Jetson TX2.
- Developed a robot capable of mapping and navigating an office space to find and pick up plastic bottles on the ground.
- Used ROS to integrate multiple different functionalities of our robot.
- Implemented a Realsense Depth and RGB camera to facilitate object navigation and mapping systems.
- Implemented a Simultaneous Localization and Mapping (SLAM) system using the open-source project RTAB-Map.
- Implemented the standard ROS navigation stack, adjusting parameters to improve autonomous movement throughout an office.
- Used the Darknets YOLOv3 convolutional neural network to detect plastic bottles within a 3D space.

### Precision OS

Virtual Reality Pre-operative Planning

- Developed a method of classifying bones from 3D CT scans and then align them within a 3D skeleton.
- Worked extensively within Unreal Engine 4 to develop an interactive simulation in which a doctor could select patient data of a fractured bone and then walk around and view this data in a full 3D skeleton.
- Helped my team to develop an algorithm that would generate a custom point-cloud histogram to classify 3D bones.
- Was able to develop a scale, rotational, position, and noise resistant classification algorithm with above 80% accuracy.

### Engineering Physics Robot Competition

ENPH 253

- Constructed an autonomous robot from the ground up, as part of a team of 3, that was required to navigate a course and “rescue” objects in a competition.
- Designed and fabricated a PCB IR Filter and motor control H-Bridge. Constructed circuits using various circuit components all soldered by hand.
- Fabrication of various mechanical components of a robot using various rapid prototyping tools such as a laser cutter and 3D printer.
- Programmed Proportional Derivative Integral (PID) control algorithms using Arduino to navigate using tape following.
- The final robot was capable of following tape using IR reflective sensors, detecting and reacting to IR sine waves, retrieving and storing objects, and transporting stored objects down a zipline via a custom storage unit.

## Experience

### UBC IT

*Vancouver, Canada*

Network Support Analyst

*June 2019 - August 2019*

- Helped the UBC networking team to shift all of their campuses towards a software-defined network architecture, allowing for complex network control through the use of a intuitive front-end web application.
- Developed complex neo4j graph database queries to gather network information and transfer it to the open source web application, NetBox
- Developed automated Python scripts to generate API unit tests based on a Swagger API documentation file.
- Developed Python scripts to interact with an Oracle database in an effort to collect and transfer username and password data to a secondary password manager.
- As a result of these activities I was able to develop useful validation and utility tools to facilitate future development of the project.

### Ayming Canada

*Vancouver, Canada*

Technology Specialist Intern

*June 2018 - December 2018*

- Assisted senior and junior consultants with completing SR&ED tax claims, US R&D tax claims, and grant applications for various local, national, and international clients; producing savings upwards of $500,000 in some cases.
- Conducted technical interviews with clients internationally and remotely to extract technical information such as a detailed problem description, evaluation of alternatives, technical uncertainties encountered and hypothesized solutions.
- Performed in-depth analysis and technical writing for a wide range of different clients in a multitude of industries
- Some examples of different technological fields included but were not limited to non-relational and relation database architecture, VoIP systems, point-of-sale systems, computer vision, and network architecture
- Produced weekly status updates to present to colleagues/superiors on completed deliverables, current progress, and action plan that included an expected date of completion.

## Education

### University of British Columbia

*Vancouver, Canada*

B.A.Sc. in Engineering Physics

*September 2016 - May 2021*

- Program focus spread across electrical, mechanical, and computer engineering
- Personal technical elective focus on computer science and specifically within the realm of computer vision and machine learning.

### University of Victoria

*Vancouver, Canada*

Bachelor of Science (Transferred)

*September 2015 - May 2016*