

Glyn Finck

B.A.Sc IN ENGINEERING PHYSICS

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Skills

Languages	Python,C++, Java, TypeScript, JavaScript, C
Frameworks	Django, ROS, Tornado, Angular, React
Databases	Oracle,MySQL, neo4j
Technologies	HTML5/CSS3/Bootstrap4,REST API, Redux, Styled Components,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

Graph Editor

PERSONAL PROJECT

- Developed a custom code editor/visualizer that allows computer programmers to write and test graph algorithms in the web.
- Application written using React and ES7.
- Developed a custom React hook for instantiating a virtual Python shell.
- Developed a custom Pyodide Javascript Webworker to run Python code in browser, without the need for a back-end.
- Created a custom Graph class (in Python) for facilitating communications between Python code and the DOM.
- Used Redux for managing graph state and animations.
- A live previeow of this application can be found at www.glynfinck.ca under 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.

Ayiming 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