

JONATHAN BARNES

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PROFESSIONAL SUMMARY

Electrical Engineering graduate with a passion for designing and implementing automation solutions, including PCB design and testing. Proven ability to streamline processes, improve efficiency, and enhance quality in complex technical environments. Seeking a challenging role where I can leverage my technical expertise and contribute to the development of cutting-edge technologies.

SKILLS

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|--------------|----------------|-------------------|----------------------------|
| ● Python | ● Git | ● API Integration | ● Altium/KiCad |
| ● Javascript | ● UX/UI Design | ● Verilog | ● Electrical Lab Equipment |
| ● C, C#, C++ | ● MATLAB | ● Multisim | ● ARM & 8051 Assembly |

WORK HISTORY

Automation Engineer, 09/2024 - Present

Barco – Vancouver, BC

- Developed and implemented Python and C code solutions to automate laser diode testing processes, utilizing a CNC machine, G-code, and Arduino for precise control and data acquisition.
- Interfaced various test equipment with the CNC machine and Arduino, ensuring seamless communication and data transfer for efficient testing procedures.
- Streamlined laser diode automation workflows for assembly line processes, resulting in increased throughput and reduced testing time. Allowing for mass testing to support a commercial product release
- Developed data analysis tools to generate comprehensive test reports, facilitating performance evaluation and quality controls

Photonics Testing Automation Engineer, 05/2022 - 08/2024

The University of British Columbia & Dream Photonics – Vancouver, BC

- Designed, assembled, and programmed photonic probing stations for optical and electrical measurements on photonic integrated circuits (PICs). Conducted comprehensive characterization of PICs using automated probe station technology.
- Developed and implemented unified software for probe stations, enhancing ease of use and synchronicity. Programmed and automated test & measurement instruments for advanced electro-optic measurements. Implemented advanced technologies (LLM analysis, machine vision) for automation & simplified testing.
- Utilized Python for processing and analyzing measurement data, creating visualizations to communicate key findings and insights.
- Managed end-to-end project life cycles, including establishing timelines, setting deliverables, and coordinating team activities.

Electronics Design Co-op, 05/2021 - 01/2022

Motorola Solutions Inc. – Vancouver, BC

- Led design and assembly of camera PCB testing/programming tools, from Altium board design through to mass production implementation.
- Built and tested various electronic circuits using electronics workbench tools and test equipment
- Successfully sourced replacement components for production-level PCBs amidst COVID-19 shortages, coordinating with suppliers and hardware teams to prevent delays.

EDUCATION

University of British Columbia - Bachelor of Applied Science: Electrical Engineering 05/2025

- Relevant courses: Control Systems, Digital Signal Processing, System Software Engineering

ENGINEERING PROJECTS

ExG Data Analysis Application – Vancouver, BC, 09/2023 - 04/2024

- Developed a customizable ExG data collection and analysis application for studying sleep processes using Python.
- Implemented frontend design, signal visualization, and filtering capabilities for EEG, EMG, and ECG signals.
- Applied advanced signal processing techniques, including Higuchi Fractal Dimension and Fast Fourier Transforms, for post-processing and analysis.