Brandon Hoynick

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Highlight Of Skills & Career Direction

- Developing specialization in controls and automation for energy and industrial systems; strong interest in sustainable energy, green technologies, and efficiency improvements in conventional power systems.
- Extensive hands-on experience in industrial operations and applied research across both large- and small-scale environments, including industrial design under engineers, safety documentation (SOPs, progress reports), PPE, and interpretation of P&IDs.
- Strong background in software and embedded electronics with a focus on system integration for control systems, including SCADA, PLCs, HMIs, IEC programming languages, Python-based SQL database management on Linux servers, and C# for Unity-based 3D simulations.
- Demonstrated leadership and project management through technical and student-led initiatives, including serving as President of the Renewable Energy Design (RED) student club, advancing solar greenhouse automation projects, and independently developing personal electronics and SCADA systems.

Academic Education & Co-op Status

BSc in Computer Engineering (Software option) Co-op — September 2020 – April 2027
University of Alberta, Edmonton AB — 8-months of co-op terms still available

Certificate - Ladder Logic and Advanced PLC Programming — Acquired in October 2024
Northern Alberta Institute of Technology, Edmonton AB — (certificate info)

Certificate - Power Engineering - 3rd Class — Acquired in January 2016
Alberta Boiler Safety Association (ABSA), Edmonton AB — (certificate registry)

Work Experience

Industrial Automation Engineering Student (Upgrading Plants) — May 2025 – December 2025
Suncor - Syncrude Mildred Lake, Fort McMurray AB
Software migration / integration, PLCs (Schneider, Rockwell), DCS (Honeywell Experion), Modbus communications

- Led hardware assembly and software migration of Schneider Momentum PLC systems and Modbus Plus Gateway Converters, including extensive device-to-device simulation testing using Quantum PLC and Modbus simulation tools across Modbus TCP, RS-485, and Modbus Plus protocols.
- Managed the migration of a Rockwell FactoryTalk Directory Server, performing research, installation, backup, and restore activities, and resolving software malfunctions despite limited diagnostic visibility.
- Executed four Schneider M580 PLC firmware upgrades (two independently, two assisted), covering processors, network modules, and remote I/O cards in preparation for turnaround changeouts; assisted with two full field hardware swap jobs.
- Developed precursor engineering and system-mapping drawings for a Honeywell FTE DCS network, consolidating fragmented documentation into clear, usable references for ongoing maintenance and troubleshooting.
- Supported smaller but production-relevant tasks including DCS thin-client commissioning, VersionDog version control system commissioning assistance, development and maintenance of Power BI and Aveva / OSIsoft PI Vision dashboards, and Python scripting to batch-modify DCS graphic tags.
- Demonstrated strong initiative and teamwork by engaging across PLC, DCS, and controls activities, quickly learning unfamiliar systems and contributing improvements to support tools, documentation, and day-to-day automation operations.

Unity 3D Developer – UAlberta AR Application — May 2022 – August 2022
Mechanical Engineering Dept – UAlberta, Edmonton AB
C#, Unity3D game engine, augmented reality, Fusion 360, 3D modeling, Git, Gitlab, scrum / sprints

- Designed and constructed mobile app AR simulations using Unity and Fusion 360, showcasing engineering concepts, including: a Manual Transmission simulation illustrating internal gear interactions, a Wheel Free-Body Diagram visualizing dimensional vectors, and a Solar Cell animation demonstrating layering and electric potential.
- Utilized team skills and tools, with a central Gitlab repository and weekly sprint meetings.
- Enhanced understanding of engineering concepts through creation of designs, and improved team coding by helping solve their problems, like writing a ray tracing script for highlighting model walls.

PROJECTS (See more on cvprofile.branhoy.com by searching in the featured / project sections)

SCADA, HMI and PLC Build with Embedded Systems October 2024 – December 2024
OpenPLC PLC, FUXA SCADA, HMI, Function Block, Ladder Diagram, Raspberry Pi, Arduino Nano, Modbus

- Integrated SCADA and PLC systems using FUXA SCADA on Windows and OpenPLC runtimes on Raspberry Pi and Arduino Nano, both equipped with physical sensors and actuators. Designed HMIs, configured Modbus communications, and implemented data logging and alarms for real-time monitoring.
- Enabled hands-on learning of industrial automation systems through multi-device testing and supervisory control demonstrations.

Twitter-like Database on Linux Server September 2023 – December 2023
CMPUT291 Database Management – UAlberta
Python, SQL (SQLite database), MongoDB (No-SQL), Linux

- Significantly enhanced Python, SQL, and MongoDB programming skills through developing a CLI / terminal-based messenger program, on Linux.

Arduino Weather Station January 2021 – April 2021
ENGG160 Engineering Design – MacEwan University
Arduino [C/C++ like], Fusion 360, project management, mechanical design, reporting, electronic sensors

- Designed, assembled, and programmed an Arduino-based weather station featuring a custom wind-speed anemometer using a rotary encoder, plus temperature and humidity sensors.
- Developed, 3D-modeled, and 3D-printed wind blades and housings in Fusion 360 and delivered a professional design report simulating client-focused engineering documentation.

EXTRA-CURRICULAR CLUB INVOLVEMENT

President, Renewable Energy Design (RED) September 2022 – Present
UAlberta Engineering Club, Edmonton AB

• **RED's Weather Station Installation on Solar Greenhouse** July 2024 – October 2024
NovaLynx weather station, Home Assistant, Raspberry Pi, serial communications, physical installation

- Scoped and planned location and installation of professional weather equipment at greenhouse, including: sensor locations on roof; sensor structure procurement, cutting, and installation; wiring; system data setting; and manual integration with Home Assistant on our Raspberry Pi through serial wiring and communication coding.
- Strengthened project management and technical skills through my procurement of materials and integration of systems that were not so easy as `plug and play`.

• **RED's Home Assistant Component Automation Server for Solar Greenhouse** May 2023 – December 2023
Raspberry Pi, Home Assistant, ESP32, ESP8266, sensors, Python, Cloudflare

- Incorporated greenhouse sensors into ESP devices for wireless communication with a Raspberry Pi host running Home Assistant automation software.
- Enhanced functionality to include sensor dashboards, Python script control, data recording and system backup to Google Drive, and secure tunneling the system through Cloudflare enabling remote access via website.

ACHIEVEMENTS & AWARDS

Winner - Alberta Power Industry Consortium Hackathon, Edmonton AB February 18 – 20, 2025
Developed neighborhood modeling software for mapping electrification and green-tech grid load impact.

Winner - Alberta Power Industry Consortium Hackathon, Edmonton AB April 28 – 30, 2023
Developed microgrid management software for trading power with the Alberta grid.

OTHER TECHNICAL SKILLS

Languages: IEC PLC languages (Ladder, FBD, ST, SFC), Python, C#, Rust, C/C++

Design: PLC Editors (Rockwell / Allen-Bradley, Schneider, Triconex SIS), CAD (Fusion 360, SolidWorks), ExpressJS, FreeRTOS, VSCode IDE, Word, Excel, PowerPoint

Equipment: Windows, Linux, Raspberry Pi, Arduino and ESP microcontrollers, 3D printers, electrical tools (multimeter, soldering station, lab bench DC power supply, oscilloscope)