

Jonas de Hoog

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EDUCATION

Bachelor of Engineering – Biomedical Engineering | University of Victoria

Graduation date: April 2027 | GPA: 4.44

WORK EXPERIENCE

Owner | June 2024 – Present | Victoria Student Landscaping | Victoria, BC

- Founded and scaled startup to 100+ clients across Victoria within 1 year driving revenue growth through strategic marketing and community outreach.
- Managed all financial operations: Cash flow optimization, profit/loss analysis, tax filing, and budgeting—maintaining >33% net margins through cost-effective resource allocation.
- Handled client relations, managed bookings, conducted quotes.
- Train students in standard landscaping/hardscaping techniques and quality standards.

Lab Assistant Co-op | September 2024 – August 2025 | Solaires

Enterprises Inc. | Victoria, BC

- Recommended by HR manager as top student hire at Solaires.
- I received the Rising Star award from the CEO for my work and growth within the company.
- Developed PCB-integrated encapsulation system (FR4/aluminum-core) with embedded push connectors, eliminating glass breakage and enabling 100% contact reliability in damp heat testing (85°C/85% RH).
- Pioneered cold-lamination process using PIB film, achieving bubble-free coverage on 10x15 cm² modules and reducing lamination defects by 95%.
- Led IEC 63163 compliance testing (Thermal Cycling, Humidity Freeze, Damp Heat), achieving ≤25% degradation thresholds for perovskite solar modules.
- Architected accelerated aging protocols confirming intrinsic perovskite stability (1,000h shelf life, 500h@85°C), isolating contact/material failure modes.
- Led circular perovskite module design (Haila), achieving aesthetic prototypes for SDTC expo and securing patentable push-connector IP.

- Discovered thermal healing protocol that boosted PCE 7–9% via defect passivation, unlocking performance recovery in aged modules.
- Spearheaded substrate recycling protocol using DMSO solvent and ImageJ analysis, enabling 90% perovskite/carbon removal for substrate reuse.

Bagging Plant Operator | September 2022 – January 2023 | Raymont

Logistics Ltd. | Prince Rupert, BC

- Connected hoses to railcars, identified seal numbers, removed caps, placed catch trays, and installed filters.
- Utilized basic hand tools such as drills, nail guns, air hoses and small machinery such as skid steer, forklift, JLG lift as needed.
- Managed vacuum systems and set vacuum pressure as needed.
- Reset and programmed machines during product changes to maintain optimal pallet format.
- Loaded pallets into containers, conducted final quality inspection checks, and attached pallet labels.
- Took samples from railcars and photos of containers prior to loading, during loading, and once complete to Ray-Mont cloud.

Cargo Sampler Co-op | May 2022 – August 2022 Certispec Services Inc. |

Prince Rupert, BC

- Operated conveyer belts and large machinery for the coal ship loading plant located at Trigon Terminal.
- Played a crucial role in ensuring quality control and accurate sampling of coal cargo at Trigon Terminal.
- Inspected automated sampling plants to ensure proper functionality and condition.
- Recorded information on standard forms regarding cargo type, quality, and condition during loading/unloading.
- Sampled cargo loaded onto vessels and assisted in the reduction, preparation, and distribution of samples to third-party laboratories.
- Conducted a report on finding more efficient ways of dealing with metal detected in conveyer loading belts.

SKILLS

Research & Lab Work: Laser technology, Process Innovation, Reliability & Certification

Programs & Languages: MATLAB, C, HTML, CSS, SolidWorks, ImageJ

Manufacturing: Encapsulation & Materials Engineering, Quality Control Systems, Product Development, SolidWorks (Certified Associate), SolidWorks PDM, Design for Manufacture and Assembly, Engineering Drawings, and Finite Element Analysis (FAE).

TECHNICAL PROJECTS

Personal Website | 2024 - Programmed my own website to highlight my academic achievements.

Hydroponic System | 2023 - Designed a self watering hydroponics system using SolidWorks.

Hybrid Model Rocket | 2021 - Designed a model rocket in SolidWorks, see my website for pictures.

Lead Engineer – FIRST Robotics Competition | Grade 12

- Led team in the design and build of our school's robot for the FIRST robotics competition.
- Assisted in the programming of the autonomous aspects of the robots' tasks like object identification.

REFERENCES

Provided upon request.