JASON NOH EIT

416-554-0244 | hyeonjun.noh@alum.utoronto.ca | **jasonnoh.com**

EDUCATION

University of Toronto | B.A.Sc. in Mechanical Engineering with Honours – CGPA 3.54/4.0 (MGPA 3.94/4.0)　　　　Spring 2021
Minor in Engineering Business

ENGINEERING EXPERIENCE

Form Technologies – Dynacast | Tooling Excellence Engineer, OpEx – North America ⊡　　　　2021 – 2022
- Designed an improved tooling downtime data collection system that features backend user-error proofing logic, quick one-scan data entry process, auditing methods & metrics, and automated elapsed time calculations for 7 possible repair conditions in QAD ERP
- Implemented a new standardized, automated, and readily accessible reporting system to managers, supervisors, and scheduler that delivers key performance data on tooling downtime, trends, elapsed time, machine availability, and repair status using QAD and Excel
- Developed an inventory management and electronic Kanban system that organizes all critical spare tooling components and signals demand real-time digitally to purchasing and in-house manufacturing to eliminate stockouts and associated long repair lead times
- Reduced tooling downtime by 25%; improved OEE by 3% through reduction of stuck casting & spare component stockout incidents
- Devised a new thermal deburr basket that increase throughput by 50% at constant labour hours

Toyota Canada Inc. | PEY Co-op Quality Engineering Internship ⊡　　　　2019 – 2020
- Resolved 21 quality cases by working with suppliers and development engineers to engage in root-cause analysis and countermeasure development and to test accessory parts for failure verification, for failure duplication, or as part of an internal investigation
- Led the evaluation of two new potential products with the development team and suppliers by analyzing technical specifications, installing, and testing in real-world conditions; determined one was not market feasible and the other has potential safety issues
- Compiled, analyzed, and reported warranty claims data from SAP on 2130 unique part numbers that extrapolated failure/claim rates, failure trends, and top ten issues using VBA and PivotTables; report initiated new plans to closely monitor two product categories
- Automated warranty claims processing by leveraging VBA and SAP to shorten processing time by half and recuperate more than double the amount compared to the year prior in warranty claim cost recuperation

PROJECTS

Open-Source Ventilator Capstone Project | Toronto General Hospital + University of Toronto ⊡
- Developed an open-source ventilator costing less than $5,000 that safely delivers air/oxygen to patients at minimum airway pressure with desired FiO_2 & tidal vol. by adhering to MHRA RMVS standards and using locally sourceable hardware & pneumatic components
- Designed a pneumatic circuit using subcritical/supercritical flows, ideal gas law, and Reynolds Transport Theorem to deliver required tidal volumes at minimal airway pressure, created CAD model in SolidWorks, and performed high-level validation on Aspen HYSYS

Strength-to-Weight Ratio Optimization Project | University of Toronto – Mechanics of Solids II ⊡
- Transformed a square acrylic sheet with a strength-to-weight ratio of 15.5 N/g into a part with a ratio of 78.01 N/g (5x increase) in a 3-point tensile test while reducing the mass down from 173 grams to 16.9 grams (90% decrease) by performing FEA in ANSYS
- Withstood 3.1% more load (1.32 kN) than predicted (1.28 kN) and fractured in the vicinity predicted in ANSYS

Jig & Fixture Design Project | University of Toronto – Design Optimization ⊡
- Devised a drill jig and fixture tool that is used to fabricate holes on a cone clutch base precisely and repeatedly by CAD modeling in SolidWorks, using GD&T controls, applying DFA on subassemblies for ease of assembly, and performing tolerance stack-up analysis
- Optimized to provide operator a quick insert-lock part loading method and single repeatable indexing motion for rapid manufacturing

Shopping Cart Design Project | University of Toronto – Machine Design ⊡
- Designed a cart that can carry 100kg payload and go up a curb at walking speed by performing hand-calculations & FEA in ANSYS to obtain max bending & shear stresses and critical buckling & bearing loads; determined loads are above factor-of-safety of 3
- Reinforced areas of cart frame identified to likely fail going down a curb with full payload by increasing tube diameter and thickness

Speech-to-Text AI Program Development Project | University of Toronto – Artificial Intelligence Fundamentals ⊡
- Programmed and trained a deep learning AI model that converts spoken English words and sentences to readable text with moderate accuracy by leveraging Python, PyTorch, and NumPy to create a convolutional, recurrent, and artificial neural network model
- Organized and processed over 250,000 audio samples into spectrograms using Fourier transform to use as training & validation data

Carbon Fiber Composite RC 737 Airplane | Personal Project ⊡
- Designed a 2-meter Boeing 737 CAD model in Fusion 360 by surface modeling and applying DFMA principles to reduce the amount of PLA used to 3D print moulds over time by 25% and decrease the time taken to release composite part from a mould by over 50%
- Generated, 3D-printed, and assembled moulds to produce fuselage, wings, horiz./vert. stabs., and nacelles using wet layup process

SKILLS & CERTIFICATIONS

Software: SolidWorks, Fusion 360, AutoCAD, CATIA V6, ANSYS, Python, MATLAB, Minitab, VBA, SAP BI, QAD ERP, Visio, Smartsheet
Manufacturing: 3D Printing, Prototyping, Composite Wet Lay-Up, Machining, Milling, CNC, Soldering, DFMA, GD&T, Lean Six Sigma
Certifications: SolidWorks & CATIA Associate Mechanical Design, Advanced Machining, Artificial Intelligence Engineering