

Debdatta Das, EIT(Applied)

December 12, 2018

Human Resources Manager
Red Seal Recruiting Solutions Ltd.
Red Deer, AB

RE: Application for the position of “**Field Service Technician-1911**”.

Dear Sir/Madam,

I, Debdatta Das, am writing to apply for the **Field Service Technician** vacancy at your outfit. My interest in this position is as a result of my educational background, skill sets, extensive research experience, and desire to lend my expertise in the area of hydraulic engineering, control engineering, and manufacturing engineering. I have a master's and bachelor's degree in mechanical engineering with a specialization of Mechatronics engineer in control and efficiency of hydraulic systems and intelligent control and different types of projects in the field of tool designing, manufacturing process. I have extensive hand-on experience that positions me to make a significant contribution to the achievement. I am applying for the position, believing that I will be an excellent choice for **Red Seal Recruiting Solutions Ltd.** for this specific role.

As a research assistant at the Fluid Control Lab and Fluid Power and Machine Intelligence (FPMI) Lab, I worked in multiple research projects related to power hydraulic, heavy-duty equipment's, fault tolerant control, wave energy converter, wave propagation, and cavitation. During the project on Hydraulic switched inertance boost (Step-up) converter using Transmission Line Model (TLM), I achieved the knowledge about wave propagation and cavitation problem in the hydraulic system and how to minimize this effect. During the project of Energy recuperation of Electro-Hydraulic Excavator using accumulator and hydraulic transformer, I introduced hydraulic transformer which was a combination of a hydraulic pump and a motor. Through my research career, I developed different types of controller such as PID, Fuzzy, Fuzzy PID, Neuro-Fuzzy PID, Fault Tolerant etc. As my mechanical work, I also involved drafting and 2D and 3D modeling with various CAD programs, inspecting equipment and measuring parts, designing equipment parts, producing reports and spreadsheets, maintenance scheduling, testing new equipment capabilities, talking with maintenance and shop workers, and managing projects. I did a project on “Chatter Stability Criterion for modeling and Force-Torque based online tool wear estimation of the dynamic milling process of Inconel 718 Using ANN”. This project warranted advanced knowledge in tooling design. I worked in a manufacturing company for my internship where I learned about manufacturing principals and applications. With all these responsibilities and qualification, I developed strong problem solving and troubleshooting skills as well as communication and computer skills. I am very interested in the manufacturing industry and I am willing to learn the specifics required for the job. I was able to adapt my knowledge from the classroom and apply it to the workplace effectively to finish projects and meet deadlines.

I write a scientific article and conference paper in my tenure as a research assistant. I worked in different project settings and demonstrated leadership skills while working with fellow

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researchers, advisory committees, stakeholders and different communities. I am experienced to attend academic and non-academic national and international conferences, workshops and meetings and present my research work in both academic and plain languages.

I am looking forward to speaking with you on this exciting position to determine what I am actually capable of doing. Thank you for your valuable time and consideration my application.

Sincerely,

Debdatta Das

Enclosure: Resume

Debdatta Das, BE, M.Eng., M.Sc.
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CAREER OBJECTIVE

A self-starter and resourceful worker who takes initiative with respect to organizational culture and mission. Versatile skill set with experience in equipment testing, data management, calibration site-monitoring and Strong trouble-shooting and problem solving. Proven ability to organize and manage multiple priorities and achieve quantifiable results while driving collaborative projects forward. Fast learner and independent with strong leadership, strong computer skills and critical thinking skills.

EDUCATION

- | | |
|---|------------------------------|
| M.Eng. Mechanical Engineering
University of Saskatchewan, Canada
79.00% marks | <i>Sep. 2016 – Aug. 2018</i> |
| M.Sc. e-vehicle Design Technology
University of Ulsan, Republic of Korea
4.10 (on a scale of 4.5) and 95.43% marks | <i>Mar. 2014 – Feb. 2016</i> |
| B. Sc. Mechanical Engineering
Chittagong University of Engineering and Technology, Bangladesh.
3.11(on a scale of 4.0) and 68.2% marks | <i>Mar. 2009 – Jun. 2013</i> |

SKILLS

Software: MATLAB/Simulink, Simcenter Amesim, R, 2D/3D CAD software suite (including AutoCAD, SolidWorks), CATIA V5, Pro-Engineer, MS Project, MS Office Suite, Adobe Illustrator, STATA.

Operating Systems: Windows 10/8.1/2000/XP/Vista, Linux

Programming: FORTRAN, C, C++, HTML, PLC programming and machining

Machining: Machining (Mill, Lathe, Basic hand tools, sheet metal fabrication, CNC operations); wedding processes and theory (Arc, gas, laser, spot, etc.), basic electronic design/ fabrication.

Licence: Association of Professional Engineers and Geoscientists of Saskatchewan (Applied for EIT) and Class 5 Saskatchewan driver's license

Languages: **English** (Fluent), **Bangla** (Native) **Korean** (Intermediate)

RESEARCH EXPERIENCE

Fluid Control Lab, University of Saskatchewan

Master's / Research Assistant

Sep. 2016 – Aug. 2018

Supervisor: Dr. Travis Wiens

- Project on Hydraulic switched inertance boost (Step-up) converter using Transmission Line Model (TLM) in which exit pressure can boost than supply pressure which was built for heavy machinery equipment (cooling fan). It investigated the wave propagation effect and cavitation effect and few strategies for avoiding cavitation was developed and minimize these power losses significantly. The dynamic equations were developed for this model. An optimal length of the inertance tube (uniform and shaped), the check valve location was developed in this project.

- Project on design and performance analysis of a high speed on/off hydraulic valve which was capable to open with in 2.64 ms. To achieve the project, some objectives considered: schematic hydraulic circuit, computer analysis, a prototype model.

Fluid Power and Machine Intelligence (FPMI) Lab, University of Ulsan

Master's / Research Assistant

Mar. 2014 – Feb. 2016

Supervisor: Professor Kyoung Kwan Ahn

- Energy recuperation of Electro-Hydraulic Excavator using accumulator and hydraulic transformer
- Modeling and fault tolerant control of an Electro-Hydraulic actuators
- Project work on Power Assessment Robot and Wave Energy Converter
- Design and application of various types of controller such as PID, Fuzzy, Fuzzy adaptive PID, Neural Network, Neuron Fuzzy adaptive PID etc.

SCHOLARSHIP AND AWARDS

- International Dean's Scholarship awarded by Collage of Graduate Studies and Research, University of Saskatchewan (2016 – 2017)
- AF-1 Scholarship awarded by Institute of e-vehicle Technology, University of Ulsan (2014 – 2016)
- Research grant by National Research Foundation, Republic of Korea (2014 – 2016)
- Research Assistant Scholarship, University of Ulsan (2014 – 2016)
- Chittagong University of Engineering and Technology Scholarship (2009 - 2013)

EXPERIENCE

Lecturer | BCMC College of Engineering & Technology, Bangladesh | Jul.2013-Aug. 2016

- Deliver lectures, seminars and tutorials
- Design, prepare and develop courses and teaching materials
- Develop and implement new methods of teaching to reflect changes in research
- Assess students' coursework
- Set and mark examinations
- Supervise students' research activities, including final year undergraduate projects
- Undertake personal research projects and actively contribute to your institution's research profile
- Write up research and prepare it for publication
- Contribute to professional conferences and seminars in your field of expertise

INDUSTRY EXPERIENCE

Hyundai Heavy Industries, Ulsan, Republic of Korea

Jan. 2015 – Apr.2015

- Worked with this company to develop a prototype of electro-hydraulic excavator which was research topic.

MS Precision Co. LTD, Gyeongju, Republic of Korea

May. 2014 – Jul. 2014

- Modeling and Performance Investigation of Forklift Transmission Control Valve System project

Baizid Steel Industries Ltd., Chittagong, Bangladesh

Nov. 2012 – Feb. 2013

- Worked in the steel manufacturing company including manufacturing process of making rod, Rolling Mil which produces QST500+TEMPCORE MS bar and Melting Plant which produces

MS billet as internship program. Practiced safe work processes and safe work plans. Safety always comes first.

VOLUNTEER WORKS

- Actively volunteer at Saskatoon Folkfest from 2017 - 2018
- Member - Bangladeshi Student Association of University of Ulsan, 2014- 2016
- General Sectary – Joyoddhoney of Chittagong University of Engineering and Technology, Bangladesh. 2011-2012

HOBBIES AND INTERESTS

My hobbies and interests outside of work include spending time with my wife and kid, biking, driving, and programming. When time allows, I can usually be found reading about industry trends online and new technology.

PERSONALITY

Work Ethic: Work well independently, and part of a team depending on the situation. Work well under the direction of a supervisor. Work hard and will always finish the job. Good at finding creative solutions to problems. Take direction well. Prompt for work and not tardy. Dependable and trustworthy.

Kind and Outgoing: Able to establish collegial working relationships.

Open-minded: Willing to learn new things.

Helpful: Willing to give a hand when someone need help.

PUBLICATIONS

Refereed Journal

S. A. Nahian, D. Q. Truong, Puja Chowdhury, **Debdatta Das**, and K. K. Ahn, *Modeling and Fault Tolerant Control of an Electro-Hydraulic Actuator*, International Journal of Precision Engineering and Manufacturing. DOI: 10.1007/s12541-016-0153-2

S. A. Nahian, D. Q. Truong, Puja Chowdhury, **Debdatta Das**, and K. K. Ahn, *A New Independent Metering Valve-based Energy Saving Circuit for Electric Excavator*, Journal of Drive and Control.

Refereed Conference

Travis Wiens, and **Debdatta Das**, *A COMPARISON OF HYDRAULIC AND ELECTRICAL SWITCH-MODE CONVERTERS*, ASME/BATH Symposium on Fluid Power and Motion Control, Sarssota, FL. DOI: 10.1115/FPMC2017-4273

Debdatta Das, B. N. M. Troung and K. K. Ahn, *A Novel Energy Recuperation System for Hybrid Excavator using Hybrid Actuator*, IEEE International Conference on Control, Automation and Systems. DOI: 10.1109/ICCAS.2015.7364681

Puja Chowdhury, **Debdatta Das**, B. N. M. Troung and K. K. Ahn, *Research on the Energy Regeneration and effect of Dynamic Characteristics of Secondary Control Swing for Hydraulic Excavator System*. DOI: 10.1109/ICCAS.2015.7364682

Ying-Xiao Yu, **Debdatta Das**, B. N. M. Troung and K. K. Ahn, *An Study on the Energy Regeneration System of Boom for Hybrid Hydraulic Excavator*, IEEE International Conference on Control, Automation and Systems. DOI: 10.1109/ICCAS.2015.7364677

REFERENCES

References upon request