October 12th 2017

Nokia

600 March Rd, Kanata, ON K2K 2T6

Re: RF Hardware Designer (7T7)

Dear Hiring Manager,

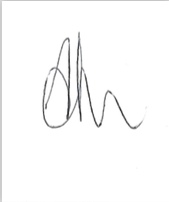
As an engineering student, please accept my application for your review and consideration regarding the posted position on the Carleton Career services job board.

I am currently enrolled at Carleton University in the Engineering Physics program. Working in a position as a RF hardware designer with your company would provide me with new insight into my field of study, and the intricacies of problem solving. As well as strengthen my skills for future opportunities within the field by expanding my knowledge in both Electrical and Mechanical engineering problems. The position would give me an opportunity to develop with others who have experience as an engineer and assist my current studies at Carleton. As a 3rd year student, I have the focus to learn and develop as an engineer, as well as build on my personal skills. During my studies, I have learned a great deal on signal and power integrity from a graduate course I am currently auditing. I have learned about clocking issues, interconnect issues and circuit simulation issues related to signal integrity. I have a great deal of experience with oscilloscopes, spectrum analyzers as well as network analyzers. I have spent numerous hours of my personal time interpreting schematics and designs of circuits along with the design and prototyping of my own hobby projects. I have also been able to learn languages such as Java and Latex on my own time and feel like learning Verilog would be an interesting challenge.

I have a great deal of experience working with Signal Integrity in high speed designs and feel like my qualifications could be an asset for this team at Nokia. The ability to work on such a diverse team such as Nokia. A team that includes over 160 nationalities in over 100 countries would be a fantastic networking opportunity for me to begin my career as an engineer.

I would appreciate the opportunity to discuss my qualifications with you further, and look forward to hearing from you. I may be reached at 705-559-5330 or by email at [adamheffernan@cmail.carleton.ca](mailto:adamheffernan@cmail.carleton.ca)

Best Regards,



Adam Heffernan, B.Eng.

**Education**

**Bachelor of Engineering, Physics, Co-op Option**

Carleton University, Ottawa, ON

* 3rd Year Undergraduate, CGPA 8.33/12.0 (B)
* Undergraduate Entrance Scholarship
* Expected Graduation December 2020

**Availability**

Available for 4 months beginning May 2018.

**Relevant Skills and Experiences**

**Technical Skills**

* Assembled a 15V D.C. power supply, which led to a greater knowledge of transformers, diodes and the bridge rectifier. Eventually, this resulted in an understanding of the design of I.C. linear voltage regulators
* Designed an Audio amplifier, which has led to a greater understanding of the BJT small signal model

**Communication Skills**

* Composed a Laboratory document for the Electronics I course, which led to a better understanding of the fundamental operation of both BJT and MOS-FET devices
* Developed a Laboratory document for the Electronics I course with a colleague, which led to an improved team working ability and communication skills.

**Analytical Skills**

* Solved coding issues in various assignments using Stack Exchange, which resulted in a fundamental understanding of the concept at hand. Such as pointers and linked lists.
* Consulted Professor Achar on the Electronics I lab document. This way, it was simple to tailor the document to his exact specifications

**Laboratory Skills**

* Installed components on a 15V D.C power supply. Installing components led to improved soldering skills along with a better understanding of prototyping electronic circuits.
* Repaired various home electronics, which has led to a more fundamental understanding of datasheets, and reading component specifications
* Composed lab reports using LaTex by adapting my coding skills from other classes and laboratories, and putting them to use to learn LaTex.

**Applied Projects**

**Team Member** Summer 2017

EveryCircuit Electronics I Lab manual

* Designed and implemented a Laboratory Manual for the Electronics I course to be used with software called EveryCircuit

**Project Leader** July 2017 – October 2017

15V D.C power supply

* Designed and implemented a 15V, 100mA power supply using 120V A.C.

**Project Leader**

Thermostat with Display May 2017

* Designed and implemented a basic thermostat with an LED display

**Work Experience**

**Tutor** February 2017 - Present

Liberty Tutoring, Ottawa, Ontario

* Encourage students to see the value, with a degree in math and science
* Helping students prepare for tests and exams, using different ways of learning
* Lead students of various ages, on a path that builds a strong foundation in math and science

**Line Cook/Customer Service Representative** October 2010 – Present

McDonald’s Canada, Peterborough, Ontario

* Assemble and maintain various pieces of new equipment in the restaurant
* Constantly looking for ways to improve the customer experience, through better service
* Resolving customer’s food and order related problems, using the philosophy that the customer comes first

**Arborist**

ProPrune, Peterborough, Ontario May 2015 – June 2016

* Removed problem trees from residential properties using pulleys and levers
* Used chainsaws and other various forms of power equipment to cut wood and clean up job sites
* Used carabineers and other personal protective equipment in order to safely climb trees

**Extra-Curricular Experience**

* Member of the IEEE
* Member of the Carleton Student Engineering Society

RECORD OF GRADES

Adam Heffernan

**Carleton University**Bachelor of Engineering, 3rd year.

Physics

Cumulative Grade Point Average: 8.33/12 Number of Academic Terms Completed: 7

Co-op (4 Month) Work Terms Completed: 0

Expected Graduation Date: 2020

|  |  |  |
| --- | --- | --- |
| **Course Number** | **Course Name** | **Letter Grade** |
| **Year One:** | | |
| PHYS 1001 | Foundations of Physics I | B |
| PHYS 1002 | Foundations of Physics II | B |
| CHEM 1101 | Chemistry for Engineering Students | B- |
| MATH 1104 | Linear Algebra for Engineering Students | C |
| MATH 1005 | Differential Equations and Infinite Series for Engineering Students | A |
| MATH 1004 | Calculus for Engineering Students | A- |
| PSCI 1100 | Introduction to Political Science I: Democracy in Theory and Practice | B- |
| MUSI 1002 | Issues in Popular Music | B |
| ECOR 1606 | Problem Solving and Computers | B |
| ELEC 1908 | First Year Project | A- |
| **Year Two:** | | |
| ELEC 2501 | Circuits and Signals | A- |
| ELEC 2507 | Electronics I | A- |
| ECOR 2606 | Numerical Methods | D+ |
| MATH 2004 | Multivariable Calculus for Engineering Students | A |
| CCDP 2100 | Communication Skills for Engineering Students | A |
| SYSC 2006 | Foundations of Imperative Programming | B+ |
| PHYS 2604 | Modern Physics I | C |
| ELEC 2607 | Switching Circuits | In Progress |
| PHYS 2202 | Wave Motion and Optics | In Progress |
| SYSC 2004 | Object Oriented Software Development | In Progress |
| **Year Three:** | | |
| MATH 3705 | Mathematical Methods I | B+ |
| ELEC 3509 | Electronics II | In Progress |
| ELEC 3105 | Basic Electromagnetism and Power Engineering | In Progress |
| ELEC 5401 | Signal Integrity in High Speed | In Progress |
| SYSC 3600 | Systems and Simulation | In Progress |
| SYSC 3051 | Communication Theory | In Progress |
| ELEC 3909 | Electromagnetic Waves | In Progress |
| PHYS 3701 | Elements of Quantum Mechanics | In Progress |
| TSES 3002 | Energy and Sustainability | In Progress |

**RF Hardware Designer (7T7) – Nokia**

Nokia is a global leader in the technologies that connect people and things. With state-of-the-art software, hardware and services for any type of network, Nokia is uniquely positioned to help communication service providers, governments, and large enterprises deliver on the promise of 5G, the Cloud and the Internet of Things.  Serving customers in over 100 countries, our research scientists and engineers continue to invent and accelerate new technologies that will increasingly transform the way people and things communicate and connect.  
  
**Example duties:**  
 1. Contribute to the different functional phases of the project including design specification, schematic design entry, digital logic design, signal integrity simulation, circuit boards implementation, prototyping, design verification and documentation.  
2. Trouble-shoot circuit board problems  
   
**Key skills:**  
1. Familiar with computer system architecture, digital logic design and verification and digital and analog circuit analysis.  
2. Ability to interpret schematics and circuit board layout.  
3. Measurement equipment: oscilloscope, spectrum analyzers, network analyzers  
4. Excellent verbal and written skills  
  
**Desired Skills:**  
1. Knowledge of signal integrity issues relating to high-speed, high performance systems  
2. Knowledge of Verilog and/or VHDL  
3. Knowledge of Python, Perl, TCL  
   
**Qualification:**  
Pursuing a degree in Electrical/Computer Engineering  
  
**Nokia Canada is committed to building a skilled, diverse workforce reflective of Canadian society. As a result, we promote employment equity and encourage women, Aboriginal persons, and persons with a disability or members of a visible minority group to apply.**

**Targeted Programs**

Bachelor of Engineering, Aerospace - Stream C   
Bachelor of Engineering, Biomedical & Electrical   
Bachelor of Engineering, Biomedical & Mechanical   
Bachelor of Engineering, Communications   
Bachelor of Engineering, Computer Systems   
Bachelor of Engineering, Electrical   
Bachelor of Engineering, Mechanical   
Bachelor of Engineering, Physics   
Bachelor of Mathematics, Computer Mathematics   
Bachelor of Science, Physics   
BIT, Photonics and Laser Technology