

Katagiri, Osamu
Queretaro, Qro. 76146, Mexico
+52 (55) 2300 9176
oskatagiri@gmail.com
ITESM ID: A01212611

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*Escuela de Ingeniería y Ciencias del
Tecnológico de Monterrey - ITESM*

Dear Selection Committee:

I am interested in the MNT program (*Maestría en Nanotecnología*) spring 2019 cohort at *Tecnológico de Monterrey* (ITESM), as advertised on ITESM's "*Mentes Brillantes*" website¹.

I am currently employed as Embedded Software Development Engineer for General Electric (GE), at GEIQ's (General Electric Infrastructure Querétaro) Business and General Aviation. As a software developer, I have developed solid skills in writing requirements, design, code and additional documentation for embedded power distribution software for flight critical systems. Additionally, I have developed effective team-work skills as I am part of a global team with full ownership of embedded software development with close interaction with Systems Engineers in UK (United Kingdom). Before joining the embedded software development team, I enrolled the 2-year rotational EEDP² program (Edison Engineering Development Program) at GE Aviation. While at the Software Edison Program, I participated in an intense leadership and technical training along with a variety of business-critical assignments.

As an engineer at GE, I developed strong communication and technical skills, demonstrated a constant grow in analytical problem-solving and the ability to apply engineering fundamentals in the business environment. In the first Edison rotation I provided support to the Advanced Power Management System (APMS) for Gulfstream. During the last two rotations I joined the GEIQ Power Software Team as Software Developer Engineer to work in the EMLS3 CCU (Electrical Load Management System - Computing and Communication Unit) for Boeing. Prior to join the Edison program, I participated in the GEIQ Lean Challenge 2015³ while I was a GEIQ Intern at GE Renewables Engineering. My last three years at GE enabled me to craft a professional set of skills, such as strong organizational and time management, leadership abilities and strong communication skills through participating as a presenter in technical and program reviews.

As detailed in my attached CV, I completed a five-year degree in Digital Systems and Robotics Engineering (ISD) at ITESM campus *Querétaro*, and I believe the knowledge and skills build up during that time in addition to my professional experience make me a candidate to the MNT program.

¹ <https://contactoposgradosyeducacionc.com.mx/Posgrados/2017/Becas/MentesBrillantes.html>

² <http://ww2.geglobalresearch.com/careers/leadership-programs>

³ <https://gereportslatinoamerica.com/lean-challenge-un-programa-de-verano-para-los-j%C3%B3venes-universitarios-de-latinoam%C3%A9rica-2360f00bff03>

The MNT program particularly interests me because of my passion for engineering. During my five-year degree in ISD, I studied topics such as Sensors & Actuators, Electrical Circuits, Digital Systems, and Computer Architecture. The mathematical and modelling skills learned from these modules have given me an excellent foundation for building a career. Aside from my degree, I have built upon my interest in this field in several ways by applying the theory for the subject into practice (as described within the first paragraphs).

Further, I believe that nanotechnology is how my knowledge in digital systems and aviation can find a common ground. For instance, Hybrid-Electric aircrafts are a key trend affecting commercial aviation in the next years. As the future outlook of oil prices is uncertain, aircraft manufacturers are in need to: 1) find alternative sources for electrical energy; 2) reduce electrical power consumption in flight instruments (e.g. sensors, actuators and displays), and 3) minimize energy losses through electrical power distribution systems.

My purpose is to investigate and develop solutions to the aviation industry-trends listed above through nanotechnology; for that reason, I am willing to relocate to the metropolitan area of Monterrey to further advance my career interests. I believe the experiences listed above match the requirements you outline for the MNT program candidate. I look forward to meet with you and discuss my qualifications in more detail. Thank you for your time and consideration.

Sincerely,
Katagiri, Osamu