

Dream and act a STEM story of a person with Disabilities.

In engineering circles, I call myself “Dr. Alexander J. Rodriguez” though, I have only seven years of experience in my field of expertise being “sensors and automotive brakes.” Though please refer to me as “Alex” if you leave any comments.

1986 – 1989: High School

I left High School, “Peninsula Grammar”, then located in Warriewood, NSW, in 1989. (Now, called “St. Lukes Grammar School”). Though I was not particularly good at Mathematics (a key ingredient of a good engineer), for some odd reason I loved it. What assisted me was, I had an excellent teacher called “Mr. Coulter” who even helped me when I left the school in his free time going above and beyond!

I also enjoyed a subject called “Technics” that was both woodworking and metal work, not at the same time! I also enjoyed Art with a teacher called, “Mrs Salir.” Apparently I had a flamboyant artistic style according to the school reports, I think Mrs Salir was hoping I would become an artist like my father, “[EL.GGoDo.](#)” Mrs Salir only knew of my father through his various catalogues and books that I brought to school. My mother was a former [Professional Tennis Player](#) and at the time a Real Estate Agent. The only person I knew who was an Engineer was my great Uncle Graeme Bruce who also lived in Sydney.

At this time, I was completely obsessed with machinery in particular metal lathes and I purchased several and knew how to use them. My stepfather “Markus” said, “why don’t I

stay at school and study to become an Engineer?" (In hindsight that would have been a lot easier) I had other ideas... firstly, I hated school (I got bullied a lot between the years 7 – 9), secondly, I did not believe I had the intelligence to be an Engineer, I thought it was beyond me.

1990 – 1993: A Trade in Fitting and Machining/Fitting and Turning (nothing to do with clothing)

After deciding to leave school, in reality to become a "High School Drop-out", though I never thought of myself with such negative terms. I simply wanted to learn more about lathes and machines in general. So, I looked in the local paper called, "The Mainly Daily" for an Apprenticeship in Fitting and Machining or Fitting and Turning as it used to be called. I found a job that said something like Fitting and Machining Apprentice Wanted at a company called LEKO Pty Ltd located at 7 Chard Road Brookvale. Your duties will involve using manual lathes, milling, and drilling machines...apply in writing with your resume attached (no email then).

I applied for the job and after a successful trial period, I was apprenticed for a period of four years.

I completed the apprenticeship in less than four years. However, nearing the end of the apprenticeship, I had a very strong desire to learn about how to design automated machines such as Computer Numerical Control Lathes and Milling Machines... Initially I started a TAFE course in Electrotechnology at Sydney TAFE but found it was too difficult to study at night and travel after work all the way to the Sydney CBD and back, in addition my Mathematics skills at that time were not high enough to understand the subject matter – so I dropped out of that course. When I dropped out of that course the fellow from Sydney TAFE said, "that he did not think that I would make it in any other

course.” But though I did not believe in my abilities, I had a highly positive attitude and that did eventually see me conquer most difficulties that I would later encounter.

1994 – 1994: Higher School Certificate (HSC) at Seaforth TAFE

What propelled me to study for the HSC was the desire to study Mechatronics Engineering at University and to enter you needed an HSC score, in NSW Australia. But before I made that decision to study Engineering, I had to make the leap from linear thinking of slowly improving on my level of education to side stepping and leaping several levels. That came after a chat with a “friend of the family” a Mathematics teacher by profession, the late “David Ford.” He said, “I should make the leap from my current level of education a Certificate in Fitting and Machining to University and thus go back and study for the HSC” – and that’s what I did.

So, the subjects I chose to study for my HSC were Mathematics 2 Unit and 3 Unit, Physics, Chemistry and English as time went on, I dropped the 3 Unit Mathematics and Chemistry (I dropped those Units due to stress) so I was not eligible for the HSC Certificate to let me enter University directly – but that did not stop me!

After I received my results for the HSC subjects I did complete. I contacted the Department of Education, in Canberra, and managed to get onto the Secretary of the Minister for Education. I asked the Secretary to fax me a list of all the Universities in Australia that had the course Mechatronics Engineering as I was not aware at the time of the “Good Universities Guide” or even if such a book existed. So, I wrote a letter, to all the Universities that had courses in Mechatronics Engineering and had my Aunty Annette help me draft it and check its grammar and then I sent the letters out.

Before I received a reply, and as to not waste time, I started a Bridging Course at the University of NSW in Sydney Australia – to improve my Mathematics. I never finished the course, as I received several replies to my mailout. The two positive replies I received was from the University of Southern Queensland and Deakin University in Geelong Victoria. Though, I never had heard of either University – I was encouraged to apply to Deakin University since it was near Melbourne and thus the Australian Open Tennis Tournament which my family on my mother's side frequented every year. So, I would more likely be able to see my family when they visited the Tennis that was what my late Nan, Thelma Alexander said.

1995 – 1998: Deakin University, Geelong, Victoria, Australia

The year I started at Deakin University; 1995 it was named "University of the Year"! What luck! A television crew went through and just happened to take a video of myself and a friend working on the computers in the computer lab and my Grandmother/Nan in Sydney happened to see it, Nan was thrilled.

I studied many interesting subjects and Deakin and was particularly interested in Robotics, Materials research and Fluid Mechanics. I even helped start a Robotics club with "Mr. Wardeiner", the Industrial Design Lecturer, But my enthusiasm to keep the club going waned.

I also put my Fitting and Machining skills to good use and was able to earn some money as a Research Assistant for the Materials Lecturer, "Dr. Bruce Crawford." I became friends with some of the master's and PhD researchers and that eventually gave me the idea of studying further once I completed my bachelor's degree in Mechatronics Engineering. At one time Dr. Bruce Crawford had the idea of having me do research with him but it never eventuated as

my scores were not consistently high enough or something like that. But again, that did not hinder me!

When I completed my degree, I received a Bachelors in Mechatronics Degree with Second Class Honours in Division B, on the 4th of December 1998. Major Studies in: Mechatronics.

I did my best.

1999 – 2006: Doctor of Philosophy in the field of Engineering.

After asking around people I knew, I was told to apply for master's and PhD scholarships at RMIT University's then Department of Aerospace Engineering. I sent in a letter with my preferences numbered most preferred field of study to least. This caught the eye of Professor Pavel Trivailo, I met him, and I also met another Academic an Associate Professor Lachlan Thompson (at the time, Now Revd. Lachlan Thompson) who was offering another scholarship proposal and was invited to an interview with all of the academics in a conference room – basically I had to state my case for wanting to study for a PhD or master's without any preparation! I was found to be most suitable for Professor Pavel Trivailo's project that was a joint project with GM Holden located at Fisherman's Bend just down the road from where RMIT's Department of Aerospace Engineering used to be! Later I would meet the team in the Chassis Department at GM Holden which was headed by my industry Supervisor Dr. Jacek Skoraczynski from there the adventure and struggle began to find the root causes of what caused a particular brake problem called Disc Thickness Variation that caused shuddering brakes in certain circumstances....

The most difficult part of the PhD was not the level of mathematics or difficulty of the problem, it was the belief that you could obtain it in a reasonable time...

Ahhh! It was supposed to take three years full-time, however, with various happenings it took me about seven years in full and part-time modes. The most difficult times were when my scholarship ran-out this caused financial difficulties for my wife (mental stress for myself), and it was a real burden; without my wife's support I would never have been able to finish.

I did not manage to get a job in my field, I got a job working for the Australian Public Service which I was very excited about, after that I "retired" for several years, then did some work with an excellent company called Bestech Australia a sensor company. After, I left Bestech Australia due to health reasons i.e., could not do the required hours. I decided to retire and look after my wife and son. I have not given up and I now am studying a programming course through Sololearn online, it's tough going, but I will keep going.

A pretty good effort for a person with disabilities which include Dyslexia among others! I hope this story is an inspiration to never give up on your dream and to never stop trying and to keep going that is the most important thing! Best of luck with your dreams!

Please note: My PhD was my mountain that I needed to climb, for you it may only be the start of your journey. What ever the case is for you keep going.

For more information about Dyslexia go to:

- <https://www.speldvic.org.au/> (this website's front page gives you an indication of what it is like to have Dyslexia,

though there is a lot more to it than the reading element! This is also the organisation where I was diagnosed with the condition as an adult.)