

An Outstanding Young Engineer's Credo; - Embrace Innovation and a Creative Mindset

09/04/24



Ezekiel Yorke, BSc, MSc, MAPETT, AMIMechE,

A Chat with Engineer Ezekiel Yorke, one of the New Faces of Engineering in Trinidad and Tobago

Ezekiel is a recipient of the Association of Professional Engineers of Trinidad and Tobago, “Outstanding Young Engineer Award”, an accolade conferred on a young engineer who has displayed excellence on a particular project in which he or she was involved. Ezekiel’s accolade came from his avid research into Innovative Mechanical and Manufacturing Systems.

He was the lead Author of a peer reviewed research paper presented at the International Conference on Emerging Trends in Engineering & Technology (IconETech 2020) which brought together leading research scientists & innovative engineers to share their experiences & research results. Ezekiel also co-authored another peer reviewed research paper at the International Association of Engineers - World Congress on Engineering 2016 (IAENG WCE 2016), Imperial College, London, UK.

Even while he pursues his PhD in Manufacturing Engineering, Ezekiel extends his creative genius into the calypso performing artform. Singing calypsos since the tender age of five, Ezekiel achieved what many seasoned calypsonians could only dream of when he made it to the Savannah stage as a finalist in 2023 T&T National Calypso Monarch Final, performing the calypso “Being Human”. So, while performing calypsos on the local stage, Ezekiel presents the results of innovative engineering research on the international stage.

Q1. Congratulations on receiving the Award of Outstanding Young Engineer from the Association of Professional Engineers of Trinidad and Tobago! What does this recognition mean to you personally, and how do you feel about being honoured at this stage of your career?

Receiving the Award of Outstanding Young Engineer from APETT is a tremendous honour for me personally. It signifies recognition for the hard work and dedication I've put into

my career thus far. Being honoured at this stage of my career fills me with a sense of pride and motivation to continue striving for excellence.

Q2. Can you share some key moments or experiences from your journey as an engineer that you believe contributed to receiving this prestigious award?

Throughout my journey as a young engineer, there have been several key moments and experiences that I believe have motivated my path to this achievement – from the opportunities granted during my undergraduate days to present research at the Massachusetts Institute of Technology (M.I.T.) and Imperial College to the comradery during my days of training along equally motivated young engineers. These catalysts are what have continued to help encourage this drive to develop this field and push further throughout my career.

Q3. As a young engineer, what inspired you to pursue a career in engineering, and what specific areas or disciplines within engineering are you most passionate about?

If you speak to almost any engineer, young or old, they may explain that the origins of their passion for engineering came from being engulfed in wonder about the beauties and intricacies behind the output of a product – be it an aircraft, a vehicle, a boat, a building. Like this, my story similarly began and developed where I eventually became enthralled in the functions that contributed to these products. The more I sought to understand the beauty of the sciences, the more passionate I became in learning more about the mechanical aspects and by extension the mechanical engineering aspects of the world around me.

Q4. What are the most significant projects or contributions you've made in your field that you feel played a role in earning this award?

Coming from a mechanical engineer discipline, where applied mechanics, finite element modelling and material science often revolved around the engine and turbine, it was quite an inspirational experience to be part of a research and application driven team, headed by Dr. Jacqueline Bridge and Dr. Legena Henry in using fluid mechanics to ascertain the conditions of haemodynamics in the human heart. With communication between ourselves and cardiologist practitioners in the field, I was able to apply simulation in engineering to assist with discrepancies faced in another discipline. By employing fluid applications such as the Coanda Effect with data driven modelling to represent in-vitro environments of mitral regurgitation, it was possible to quantify the behaviour of blood within the region at three-dimensional level. This gave rise to practitioners in this field having greater potential to understand the haemodynamics of their patients more accurately in real time compared to the analyses produced by Magnetic Resonance Imaging (MRI) machines. In retrospect, working with fellow colleagues in the mechanical engineering and biology departments helped to carry this creativity to the next level. This truly helped to inspire not just myself but everyone involved about the possibilities of an application derived from a little bit of creativity and collaboration with an outcome that can provide beneficial improvement to society.

Q5. How do you balance innovation and practicality in your engineering work, especially as a young professional navigating complex challenges?

Balancing innovation and practicality in engineering requires a careful consideration of both technical feasibility and real-world application. As a young professional, I approach challenges with a creative mindset while also ensuring that solutions are feasible, cost-effective, and sustainable. However, just as importantly, I make sure to listen to those who have come before me. While concepts evolve, the principles and fundamentals never change, and so subscribing to the advice of my predecessors is always paramount, especially when doing my PhD to bring about new ideas and new approaches.

Q6. Collaboration is often crucial in engineering projects. Can you discuss some instances where collaboration has been instrumental in achieving successful outcomes in your work?

Throughout my career, I've recognized the paramount importance of collaboration in engineering endeavours. One notable instance occurred during my undergraduate studies when I participated in a research project that required interdisciplinary collaboration between mechanical engineering and cardiology experts. This collaborative effort allowed us to address a complex challenge by integrating principles from fluid mechanics with insights from cardiological applications. This experience underscored the vital role of effective collaboration in driving growth and innovation within organizations and the broader society.

Q7. In what ways do you stay updated with the latest developments, technologies, and best practices in your field, and how has continuous learning contributed to your success as an engineer?

Remaining abreast of the latest advancements, technologies, and industry best practices is imperative for sustaining a competitive advantage. To achieve this, I actively engage in ongoing professional development initiatives, including seminars offered by reputable organizations such as APETT and IMechE, among others, extending beyond the confines of my specialized area. Concurrently pursuing my PhD in manufacturing engineering, I endeavour to broaden my perspective by exploring diverse ideas and methodologies. Moreover, my proactive utilization of emerging technologies like 3D printing and virtual reality stimulates innovative thinking, not only among seasoned engineers but also among aspiring students of engineering as they chart their trajectory within the engineering profession.

Q8. What advice would you offer to other young engineers who aspire to excel in their careers and perhaps even receive similar recognition in the future?

My advice to young engineers aspiring to excel in their careers and garner similar recognition in the future would be twofold. Firstly, prioritize continuous learning and professional development, as staying updated with the latest advancements and industry best practices is crucial for success. Actively engage in seminars, workshops, and

educational opportunities offered by reputable organizations, both within and outside your field of specialization, to broaden your knowledge and skillset.

Secondly, embrace innovation and cultivate a mindset of adaptability. Explore emerging technologies and trends relevant to your field, and be open to incorporating new methodologies and approaches into your work. Additionally, seek opportunities to collaborate with peers and experts from diverse backgrounds, as collaborative efforts often lead to innovative solutions and new perspectives.

By committing to lifelong learning, embracing innovation, and fostering meaningful collaborations, young engineers can position themselves for success and pave the way for future recognition and achievement in their careers.

Q9. Reflecting on your journey so far, are there any mentors or role models who have significantly influenced your career path or approach to engineering?

I've been fortunate to have mentors and role models who have guided and inspired me throughout my career. Reflecting on my journey, I'm grateful for the influential mentors who have shaped my engineering career. My parents, champions of lifelong learning, instilled in me a dedication to education. At UWI, project supervisors and lecturers provided invaluable guidance and equipped me with essential skills. Colleagues at APETT and beyond have continuously inspired me with their innovative ideas and collaborative spirit. Their mentorship and support have been instrumental in my professional growth and approach to engineering.

Q10. You indicated that one of your interests is a strong connection to national culture, can you tell us more about that?

Being part of the calypso artform from the junior to senior categories for 26 years has been an evolutionary part of my cultural journey. Competing and appearing in shows and competitions such as the NACC Young Kings competitions, previous national semi-finals as well as the Dimanche Gras Calypso Monarch in 2023, along with the experiences of wins and losses have been used as elixirs to help shape my character around the essence of calypso and my love for the culture. This I plan to continue utilising to help inspire others while bolstering the significance of the messages behind the poetic lyrics in song. Long live kaiso, I dare to say, is my cultural drive in words.

Q11. Looking ahead, what are your aspirations and goals for the future of your engineering career, and how do you plan to build upon this award as you continue to grow professionally?

Looking ahead, my aspirations and goals for the future of my engineering career are centered around continuous growth, innovation, and impactful contributions to the field. Building upon the recognition received through the APETT Outstanding Young Engineer Award, I aim to further solidify my expertise while pushing the boundaries of innovation. I envision leveraging this award as a catalyst for broader collaborations and opportunities, both within and beyond the engineering community. As I continue to

advance professionally, my focus will remain on addressing complex challenges through interdisciplinary collaboration, embracing emerging technologies, and advocating for sustainable engineering practices. By staying committed to lifelong learning, fostering meaningful partnerships, and maintaining a forward-thinking mindset, I am confident in my ability to make significant strides in advancing the engineering profession and contributing to positive societal impact.