

Oliver Laryea | MS in Product Development Engineering Personal Statement | USC

My addiction is rather unusual.

I don't drink coffee; I despise smoking; I've never gambled. I can proudly claim I've not really allowed any of life's usual vices into my life.

But tragically, there is one addiction that I've been consumed by. I am truly addicted to creation.

Perhaps acquired; perhaps – as a multicultural child of a Ghanaian inventor/engineer – genetically "cursed", with the symptoms showing as soon as my primary school days. Whilst my 7-year-old peers derived immense pleasure from each time their parents brought home a big tub of ice cream from the local parlor, I relished each moment my mom came home with a few big cardboard boxes, or the iconic blue-and-yellow bags, from the Swedish empire of IKEA.

It was not solely for my lactose intolerance that my childish heart was more likely to be filled with giddy joy and excitement by hearing that there's a FLOTTEBO in need of construction or by getting asked whether I'm able to put together a brand new SONGESAND. Instead of unnecessary consumption/destruction [of ice cream], I was (and have been) held spellbound by the act of "zero to one" creation. Each instance of a seemingly uninspiring – and for many frustrating – chore was a mind-blowing event reminiscent of art to me: how seemingly out of thin air, one can – through careful synthesis by following the instructions of an ingenious designer – apply short brush strokes on a blank canvas (in the form of a few unassuming nuts, bolts, and parts on the floor) to produce something beautiful, useful, and "real".

My honest fascination with the process that shapes something (in place of where there was nothing before) has not diminished since. Conversely, it has intensified, as I have soon realized that my creative/constructive escapades need not be limited only to the instances when a family member needs a new FJÄLLBERGET built. I recognized that rather than being a sole consumer and constructor of products, I, too, have the ability to be a producer or "that ingenious designer" who gets to shape the environment around him, change the status quo, and improve the daily experiences of people around through carefully crafted and innovatively ideated creations. (...not to mention the ability to generate plentiful opportunities to scratch my building itch!)

Analogous to the 19th century Décadent artists of the "l'art pour l'art" movement, I had started "creating for creating's sake". With a keen eye for problems and inefficiencies to-be-solved, as well as a deep passion for innovative solutions, I've sought to exploit as many opportunities to fix, modernize, and simplify things in my vicinity. I love building beautiful products and meaningful tech-enabled projects that bring real utility and create real value: from developing an award-winning contract-drafting AI chatbot (after observing the struggles of creating legal paperwork while registering as a sole trader) to attempting to reinvent the common food donation bin using IoT (in response to governmental policy changes demanding retailers and hospitality to donate and redistribute food).

As an aspiring polymath, I've been deliberately embarking on "maker adventures" across a wide range of different industries and verticals, particularly amazed and excited by how my acts of external creation were a catalyst for internal change and improvement of my skillset. To build Y, I had to become an engineer who has built expertise in X: and so – like a video game character leveling up his stats – I've eagerly expanded and cumulatively stacked a range of skills one atop another, each allowing me to think bigger and solve greater problems. At one time, I had to grasp the principles of webhooks and graph theory to enable hundreds of disadvantaged pupils in lockdown to find qualified university students as tutors; another time, I had to scrutinize the minute differences between PETG and TPU 3D printing filaments to ensure children get to experience the joy of winning a game "rock, paper, scissors" against a robotic arm, without it toppling over. Through my interdisciplinary explorations, I've created a strong T-shaped skill profile with a depth of knowledge in rapid prototyping using 3D printing and modeling + microcontroller development + a no-code tech stack.

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In an effort to further consolidate necessary skills and strengthen a rigid theoretical base atop of which to build, I faced little indecision when selecting my major, opting to graduate from The University of Manchester with a first-class degree in Mechanical Engineering with Management. On campus, I pursued every opportunity to network, surround myself, and 'idea-jam' with fellow passionate makers. As soon as the second week at Uni, I joined the founding team of Hyperloop Manchester, seeking to build a working hyperloop prototype as the first student-led group in England, and just a few months later, I was representing our University in the IMechE Design Challenge after forming a winning team to produce an innovative line launcher design.

But surprisingly, I've fully found "my tribe" of enthusiastic innovators outside my engineering classes, in Accelerate ME, an entrepreneurship organization for students. Spending time at AME – eventually, getting the privilege to lead it to a position of the UK's top student startup accelerator – I've had the chance to add to my interdisciplinary skillset by honing critical leadership and management abilities. But more importantly, it taught me a lesson spurred on by immense disappointment after witnessing how many AME-supported brilliant young innovators with potentially world-changing ideas failed. Most kept making the common – yet critically misguided – assumption about a major dissociation between engineering (which "makes it work") and design (which "makes it look pretty afterward"), resulting in solutions the impact potential of which was capped by their inability to resonate with users.

Self-reflectively, I acknowledged I, too, had been previously falling for this trap of neglecting "the art" to focus only on "the science" and mindlessly creating. As if leaving Plato's Cave, I've opened my eyes to appreciate how holistically and intricately intertwined these disciplines may be, seeing that one never gets to fully and freely design in a silo on its own without the input of the other. I found a new appreciation for how the combination of beautiful art-like design and scientific/engineering excellence unlocks the creation of enduring innovations and personal legacies akin to the mythical status of Steve Jobs and his beautiful products loved by millions. Since this mini-epiphany, I've been committed to cultivating these abilities, fully immersing myself in the world of human-centered design, reading extensively, and enrolling in IDEO's 4-month course, working towards my HCD certificate.

But as a born action-taker, I've also put it into action straight away whilst taking on my final dissertation, *Bio-Inspired Lower Limb Prosthetic Design*: going through the process of conceptual multi-design ideation, user insight collection, design, modeling, prototype manufacturing, and testing of a novel low-cost, high-performance 3D-printed biomimetic knee joint prosthetic that presents an affordable option for the 10M+ transfemoral amputees in the developing world. Working on my thesis filled me with an immense personal responsibility whilst inspiring and ascertaining the mission I wish to dedicate my career to: enabling all to live fully-fledged lives, regardless of physical disability.

I desire for my Jobs-esque impactful, legacy-building "dent in the universe" to sit at the engineering-robotics-medicine intersection, creating devices which – rather than only being "a thing" that one interacts with – integrally become an extension of ourselves. My journey will eventually continue with a Ph.D. in Biomedical Engineering and culminate as a DeepTech founder, but with the stakes being so high, I deem it my personal duty to first gain expertise in the area of developing/designing products and solutions that aren't just highly functional but also beautiful and enjoyable to use.

I know I'll never quit my addiction, but if I can continue employing it, and succeed at empowering longer, happier, healthier lives, I'll be happy to proclaim that it's been a good one to have.