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My research interest primarily consist of **product based electronics in the field of computer vision and machine learning**. I was fortunate to be exposed to the world of electronics at a very young age. I used to spend time at my father's factory when I was at school and I started to observe electronics since then. I was always fascinated about how electronics is being put to use in the Defence sector. I look up to my father as my idol. He is a Mechanical Engineer & M.B.A. by profession but knows almost all the core concepts of electronics. He made me realize that product development has a multidisciplinary aspect to it. The scope of product development in computer vision and machine learning based hardware is huge and I have personally experienced the range of products that are possible today. I have been fortunate to **visit eight countries across America, Europe and Asia** and seeing the current technology in these nations motivates and challenges me to do something substantial.

Being from an Electronics and Computer Science background, I am inclined towards hardware interface. I have had the opportunity to be exposed to research in academia as well as in the industry. I believe in product oriented research and have worked on multidisciplinary projects. I want to share a few projects that I am proud of.

My first research project was on **Under Vehicle Surveillance System** that used image processing and machine learning principles to detect threats concealed on the under belly of a vehicle. I made a working prototype of the software and a simulation using CAD tools.

I had interned at Security Defence Systems, which is a **Defence equipment manufacturing company.** I worked in the R&D unit of the company on different metal detection products and a EOD robot. I got a chance to represent the organization as an exhibitor at INTERSEC 2014 in Dubai & pitched the products to the visiting guests of high ranks in the security forces of the Middle East.

I did a yearlong research in **computer vision based electronics** during my undergrad on removing fog / haze from images and live streaming videos. I worked closely and extensively with a PhD scholar on bilateral and guided filters. After researching and implementing many algorithms we could come up with something novel. Our work was **accepted at the IEEE VLSI-SATA 2015** conference.

I did a winter fellowship in the Biological Sciences department at my undergraduate university and worked on a DRDO (Defence Research & Development Organization) funded Research project. I constructed 3 working prototype hardware and wrote the entire software that detects and finds the right antibiotic for the Urinary Tract Infection disease. I was actively involved in the R&D of the prototype for 14months and was a core member of a successful start-up company "xBITS – xCellence in Bio Innovation & Technologies Pvt. Ltd." *RightBiotic*, the industry ready device that I have made has received critical acclaim and appreciation across the country.

I did a research **Internship at Telecom ParisTech in the field of HCI** funded by Campus France. My work involved the project "*LivingDesktop*: augment desktop interactions with self-propelled devices". It is an attempt to **combine HCI & robotics together and investigate various scenarios possible**. This internship taught me that HCI field is quite multidisciplinary and I worked on all aspects of the project from scratch. I collaborated with three researchers in HCI from INRIA, Lille and TELECOM ParisTech, Paris. We were able to publish a 10 page **research paper at ACM SIGCHI 2016**.

I took up Graduate studies at the **University of Toronto** and worked in the **Dynamic Graphics Project** group and at Tactual Labs to build a novel Input Discrimination technique *GhostID*. I collaborated with eight researcher from academia and the industry and our work will be **published at ACM SIGCHI 2017** as a 10 page paper. HCI, being such an interdisciplinary field has given me the platform I need to grow as a researcher and by participating in the SIGCHI Summer School at Lucerne will help me develop as a researcher.

I want to come to the HCI Summer School to learn the techniques for fabrication and prototyping in a product. I believe that such a focused workshop on fabrication will be very rewarding for my research career. I also see this as an opportunity to collaborate with HCI heavyweights and researchers on research projects as well as to explore a PhD / Research position in Europe.