Aby Thomas

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Magician, Mentalist, Inventor, Wannabe Neuroscientist

Github Repo: https://github.com/AcuteCerebralEnema/Assignment-1/commits?author=AcuteCerebralEnema

Pages: https://acutecerebralenema.github.io/Assignment-1/

About

Aby is a student pursuing a bachelor's degree in IT at RMIT, Melbourne. Being born in Australia to Indian parents, he fluent in both English and Malayalam-an Indian dialect spoken in the south-western state of Kerala. He graduated from John Monash Science School and began to pursue a degree in Medical Science before transferring to his current degree. He is also an accomplished magician and has consulted for multiple award-winning Fringe shows and several corporate audiences including Coca-Cola. He writes in third person because the drafts in first person made him feel pretentious...and yet writing in third person doesn't seem to alleviate that sensation either. He currently resides in Point Cook with his cavoodle, Annie, as well as his parents and 3 siblings

Interest in IT

I joined a Bachelors of IT primarily for a change of environment. I'd been blindly trudging through a medical science degree for several years in Adelaide and, after a series of events, found myself rather disillusioned with academia in general. I decided to withdraw for the semester and kept myself busy by learning some very basic Python.

My interest in programming was multifaceted. My med sci supervisors had told me knowledge of Python and R were highly sought after in research labs and as I intend to eventually return to biological research, I concluded that pursuing an IT degree would be a justifiable use of time before I went back. Artificial neural networks and Machine learning are also incredibly fascinating fields of study that I hope this degree will allow me to explore more thoroughly.

Beyond that, I also hope to use these skills in prop building and illusion design. I frequently find myself in positions where a basic understanding of Python would reduce outsourcing costs, help fix errors on the fly, and open myself up to an infinite number of new potential effects. Clean, professional website design is also a heavily overlooked selling point when booking clients which I plan to work on during this course.

A primary reason for my hiatus from biology stemmed from the lack of practical, self-guided, real world applicable study I was able to undertake during an undergraduate degree. Over the past 4 weeks I've found that this IT degree offers significantly more creative freedom and opportunities for open collaboration which I enjoy immensely.

I was drawn specifically to RMIT as both my mother and grandmother earned degrees here.

Ideal Job

Neuroscience, much like the rest of specialised medicine, suffers from a lack of generalists…as hinted by the term "specialised medicine". It allowed scientists to explore minutiae within systems and uncover the mechanism of action for a countless number of specific minuscule processes occurring within the body. This focus on specific individual processes also assisted in securing funding as goals and outcomes could be made more concrete and definable. The same can be said for neuroscience, where careers are made studying individual structures or diseases localised to specific areas of the brain. I'm drawn to this specific field because integrative neuroscience combines and interprets all this research to create maps of how complex behaviours are developed and how multiple structures interact with each other, providing further insight into processes such as brain plasticity. I hope to, at some point, hold a position in which I'm able to both teach and conduct research, ideally in the UK and this position seems to fill those criteria perfectly.

Skills required

The position requires significant teaching experience, an appropriate PhD, a proven history of impactful research. It also requires grant writing experience and the ability to juggle pastoral duties alongside self-directed research and administrative duties simultaneously

Skills possessed

I currently possess 2.5 years' worth of a medical science degree and a cert IV in Lab Tech.

How to achieve goal

1. Maintain HD average…
2. Email labs with undergraduate research opportunities
3. Contribute to research and get published
4. Apply for csiro UROP program
5. Complete Bachelor of IT course
6. Transfer credits for medical science and complete final topics

7. Pray you've done enough to be accepted into PhD candidacy
8. Otherwise enrol in Neuroscience Master's program
9. Apply for teaching roles at universities
10. (Now apply for PhD)
11. Cure Parkinson's disease and probably world hunger as well. Why not
12. Receive Nobel Prize
13. Have Oxford offer tenured teaching position with free reign over labs
14. Ignore previously advertised position. You've surpassed it anyway

Personality profile

Customize

TYPE:	Turbulent Mediator
CODE:	INFP-T
ROLE:	Diplomat
STRATEGY:	Constant Improvement

- **INFP-T**
- **A postmodern leader**
- **A Theorist/ pragmatist. Lacking in activist archetype**

The Myers-briggs and learning styles tests indicate a strong tendency towards pursuing creative and experimental endeavours and hint at the benefits of learning via modelling and practicals where possible and storytelling/ problem setting otherwise. Both suggest an ability to bring unconventional ideas to the table and single-minded drive when a passion project is uncovered. The Myers-Briggs also refers to a certain naivety/ tendency to set unrealistic expectations, all of which I, admittedly, can relate to. The Leadership style assessment test describes a postmodern leader as one who understands "leadership is both an art and a science", postmodern leaders being people who "help others see their own life in a new light", excelling at improvisation and approaching different ideas with trust and mutual respect. I'm not certain I've put myself in enough situations yet to accurately assess the validity of these claims for myself.

Project Outline

<iframe width="560" height="315" src="https://www.youtube.com/embed/PkwtkkEq0GY" title="YouTube video player" frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-media; gyroscope; picture-in-picture" allowfullscreen></iframe>

I have, for a number of years held the fantasy of creating a projection system, based on a VR headset, built into a handheld antique mirror. In summary this device projects a video through an ordinary looking mirror creating a “scrying” effect, allowing the user to see moving environments within the mirror. The mirror will be capable of determining its location in relation to the user’s head, meaning the user can hold the mirror in various positions allowing the user to view the scene within the mirror from multiple angles, much like a VR experience played in a static position. Any electronics must remain hidden within the structure of the mirror itself.

Motivation

This project is purely self-serving. My friends and I intend to conduct a theatrical séance experience for festivals next year and a scrying mirror. This project interests me due to how unique the effect is from a theatrical standpoint as well as the wide range of skills required to create it including an understanding of gyroscopes, accelerometers, electronics, programming, object recognition software, light optics and 3d printing/ mould fabrication. It also circumvents the usual shortcomings of routines involving sleight of hand, as the effect is “self-working” and allows full focus to be given to worldbuilding and presentational aspects of the show.

Detailed explanation

The ideal scenario would involve developing a stand-alone, self-contained handheld smart mirror capable of detecting its position in relation to its user’s eyes such that moving scenes played through the glass responds and shifts dependent upon where the user holds the mirror, similar to a google cardboard headset. However, having seen the size and complexity of a smart mirror it may be a requirement that positional tracking data be sent from external monitors to the mirror. Possible methods of tracking include facial recognition systems much like Snapchat’s or Instagram’s. It may otherwise be possible to place fluorescent dots on the forehead of the participant, allowing the mirror to track the dot rather than having to integrate facial recognition software similar to a motion capture system. Alternatively, a pseudo constellation tracking system may be implemented with IR markers on the mirror and IR diodes that may be worn by the participant (potentially integrated into some “protective garb/helmet” to shield them from the potential adverse effects of scrying. Output from the diodes would be processed by sensors placed around the stage and sent back to the mirror. This idea is based on Oculus VR tracking methods In the scenario where adding these capabilities to a handheld mirror is unfeasible, a wall mounted mirror will suffice. The device would also use a 2-way mirror to integrate smart glass effects in which images can be projected on a reflective surface. It should be noted that a wall mounted mirror would only require 180-degree videos, a handheld mirror would require full 360-degree coverage. This project requires an understanding of Python, raspberry pi,

accelerometers, optics, IR detection and facial recognition/ motion capture, as well as the ability to print 3d models or in the case of the wall mounted mirror, a capable woodworker would be required. The project would also require a raspberry pi, IR sensors, IR markers/ diodes, a small (17cm) computer monitor. While the parts are rather easy to obtain, the technical skills will take diligent effort to develop. However, I'm familiar with the community makerspaces around Melbourne and am confident that I'll be able to learn the whatever may be required to build a working prototype for assignment 2.

Outcome

Admittedly this pet peeve may seem childish and unsubstantial to most in that it doesn't solve any pressing universal humanitarian issue, however, it is the case that the magic community is very much a victim of a lack of originality. Classic routines from over a century ago have become crutches for those unwilling to experiment. of course, these routines, in the right hands, still produce results, leave audiences amazed and generate repeat bookings. Why change that which is not broken? But I feel this mindset is restrictive and borders on a lack of integrity, something that my friends and I make a concerted effort to avoid when writing for shows. The intention behind a project like this is to ensure our shows stand out and provide audiences with an experience that is worth their time and money.

References

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W3schools.com 2022 *HTML Reference,* Refsnes Data, viewed 25/03/2022

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