

Elton Henry Savio Lobo

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Profile

- Highly self-motivated Ph.D student with a keen interest in Clinical Neuroscience, Computational Neuroscience, Biomechanics, Digital Health, User-centred Design, Human-Computer Interaction, System Design, Image Processing, Embedded Electronics and Biomedical Engineering.
- Rich experience in tools such as Ionic, MATLAB, OpenCV, Visual Studio, Arduino, Solid Edge CAED and Kiel.
- Additional Experience in digital circuit design using VHDL, Verilog, Altium, Xilinx and Eagle.
- Computer Skills: Linux/Windows/MAC, C/C++, HTML/PHP/CSS, Python, ASP.NET and Javascript.
- Currently on an Australian PR Bridging Visa with No Work Restrictions

Experience

TUTOR – REAL WORLD CYBER SECURITY (SIT182) | MARCH 2020 – JUNE 2020 | DEAKIN UNIVERSITY

- Assignment and Examination Marking

CASUAL RESEARCH ASSISTANT | NOVEMBER 2019 – MARCH 2020 | INSTITUTE FOR PHYSICAL ACTIVITY AND NUTRITION, DEAKIN UNIVERSITY

- Design and re-iteration of a smartphone app for blood pressure monitoring
- Setting up servers for data collection and storage
- Publishing App in different App Stores
- Manuscript Drafting and Modifications

TUTOR – DATA AND INFORMATION MANAGEMENT (SIT103) | JULY 2019 – OCTOBER 2019 | DEAKIN UNIVERSITY

- Planning and conducting lab sessions every week (1hr planning and 6hrs lab)
- Assignment and Examination Marking

TUTOR – BIOMECHANICS (HSE202) | JULY 2019 – OCTOBER 2019 | DEAKIN UNIVERSITY

- Planning and conducting lab sessions every week (1hr planning and 3hrs lab)
- Assignment and Examination Marking

TUTOR – USER CENTRED DESIGN (SIT216) | MARCH 2019 – JUNE 2019 | DEAKIN UNIVERSITY

- Planning and conducting lab sessions every week (1hr planning and 6hrs lab)
- Assignment and Examination Marking

STUDENT RESEARCHER | JULY 2016 – DECEMBER 2017 | SPORTS TECHNOLOGY AND BIOMEDICAL ENGINEERING LABS (SABEL), GRIFFITH UNIVERSITY

- **Master's Thesis:** Gait Determination and Analysis using Microsoft XBOX Kinect

Education

PhD | CURRENT | DEAKIN UNIVERSITY / UNIVERSITY OF COPENHAGEN

- **School of Information Technology, Deakin University**
- **Section of Health and Medical Services, Department of Public Health, University of Copenhagen**
- **PhD Thesis: Developing Technological Support Strategies in Stroke Caregiving**
Caregivers of people living with stroke often experience greater levels of anxiety and depression post person with stroke discharge from the hospital. This is with regard to managing the person with stroke's disease trajectory and quality-of-life, which may have a negative impact on the caregiver's health including mental, social and physical outcomes. To support this gap in stroke recovery, it is necessary to not only improve caregiver knowledge and skills, but also find means to improve quality-of-care within the home setting. However, the type of support may differ based on individual people living with stroke and caregiver situations, and their treatment. Hence, a research needs to be conducted to identify the key aspects of stroke care required by the caregiver and create a tool to support these factors.
***Purpose:** This research project looks towards understanding the needs and requirements of a stroke caregiver using participatory design practices, and developing technological strategies that researchers can use to help support and reduce the caregiving burden.*
- **PhD Coursework:** *Clinical Neuroscience, Responsible Conduct in Research, Intensive Medical Writing, Designing Human Methods, Business Models for Innovative Care for Older People, Foundations for Assisting in Home Care*

MASTER IN ENGINEERING | JULY 2017 | GRIFFITH SCHOOL OF ENGINEERING

- **Electronics and Computer Engineering**
- **Electronics and Sports Engineering**
- **Master's Thesis: Gait Determination and Analysis using Microsoft XBOX Kinect**
This was a Master Thesis Project which focused on understanding the biomechanics of the gait movements by performing basic gait activities in front of a Microsoft XBOX ONE Kinect. The processing was done by utilizing MATLAB. The performance of gait was determined based on the variations of angles in both static and dynamic modes.
The system had the functionality to determine the user and practitioner from the given frame by using a pattern determination technique which made the system effective for real time processing and would help reduce the errors in outputs.
Based on the designed model it was also possible to design an interface to determine the frontal area and atmospheric drag forces that may influence a cyclist.

BACHELORS IN ENGINEERING | JULY 2014 | MANGALORE INSTITUTE OF TECHNOLOGY & ENGINEERING

- **Electronics and Communication Engineering**
- **Bachelor's Thesis: Eye Controlled Wheelchair**
The aim of this project was to improve the lives of the people who are paralyzed and have no control over their hands or legs.
The wheelchair that we built enables the paralyzed person to move the wheelchair just by his eye movements thus enabling the patients to move around independently in spite of severe disabilities. The wheelchair moves in the specified direction depending on the position of the eye ball. This enables the paralyzed person to move around freely and independently.
As an extension to this project we have included wheelchair control using android phone, so that the caregiver can move the wheelchair with the help of his phone and need not push the wheelchair manually, thus reducing the effort.
- **Mini Project: Glaucoma Detection using Cup Disc Ratio**
Glaucoma can be detected by estimating the damage on the optic nerve axons present behind the eye. This can be seen with the help of retinal images taken from a Fundus Camera. The camera acquires images of the macula, optic

disc and retina. This is passed through an algorithm that calculates the Cup Disk Ratio designed using Matlab. The Cup Disk Ratio filling of a normal eye is measured to be 0.3 and below.

- **Mini Project: Braille Array using Relays**

The system was designed to convert a text into a braille array. This was done by using a camera that detects the text using MATLAB OCR. The text is then processed in an algorithm in order to place each alphabet in one of the relay set. Each alphabet was provided with 6 relays. The 5V relay was controlled by using Arduino. Due to the limited number of pins the Arduino would send a serial data through each pin and using a serial to parallel convertor the data would be provided to the relay. In order to create a braille. The relay cap was removed the relay tip was glued to a stick that would control the opening and closing of the holes.

- **Mini Project: Development of a machine vision system for a real-time precision sprayer**

The aim of the project was to develop a machine vision system for a real time precision sprayer. This was achieved by using a monochrome CCD camera located in front of the tractor, the discrimination between crop and weeds is obtained with an image processing based on colour differentiation method in MATLAB.

The project had the ability to control the sprayer and spray whenever it detects the leaf and then proceed with its normal functions. On detection of the weed the sprayer is stopped so as to stop the growth of weed in the crop.

DIPLOMA IN INFORMATION TECHNOLOGY | MARCH 2010 | ST. ALOYSIUS PRE-UNIVERSITY

- **Diploma Thesis: Visitor Management System**

The project aimed at designing a PHP/MYSQL based Visitor management system. The main objective of the project was to digitize the visitor log book. A user entering the organization needs to fill his/her details and a notification is sent to the employee they are visiting. A copy of the details is stored in the database to estimate their entry and exit times to be extracted via the dashboard when required by the administrator.

Skills & Abilities

COMPUTING SKILLS

- *Languages:* C/C++, Basic Python, Action Scripting, XML, Verilog, VHDL, Assembly, HTML, CSS, PHP, ASP.NET, jQuery, JavaScript.
- *Operating Systems:* MS-DOS, Linux, Windows, MAC OS
- *Applications:* Visual Studio Code, Adobe Illustrator, Adobe Dreamweaver, Adobe Flash, Adobe Photoshop, Adobe InDesign, Windows Movie Maker, Microsoft Expression Web, Microsoft Word, Microsoft PowerPoint, Microsoft Publisher, Microsoft Excel, Microsoft Publisher, Microsoft Visio, Altium, TASM, Kiel, Xilinx, Corel Draw, Solid Edge CAED, MATLAB, Arduino, Visual Studio, OpenCV.

ACCOMPLISHMENTS

- Secured a full PhD scholarship from Deakin University, Australia and University of Copenhagen, Denmark
- Runners-up in the Telstra Innovation Challenge for the "Design of an Intervention to Support Carers in Australian Aged Care Centres"

CERTIFICATIONS

- Programmable Logic Controllers
- Microcontroller based Robotics
- MS-DOS
- *Coursera:* Business Models for Innovative Care for Older People
- *Coursera:* Foundations for Assisting in Home Care

TEACHING SKILLS

- Tutored Bachelor's Coursework at the School of IT and Faculty of Health at Deakin University.
- Tutored Postgraduate course work students with basic Programming and Electronic concepts.
- Have lead several seminars during under graduation for the Department of Electronics.

TIME MANAGEMENT

- Divided Master's thesis into multiple stages over a year and finished it within the set deadlines.
- Effectively managed time during under graduation to handle mini projects and college coursework.
- Known to finish software design projects well within set deadline while working as a freelancer.

LEADERSHIP

- Received a Leadership award from Make a Difference for the role of Event, Marketing and Design Head.
- Received a Leadership award from St. Aloysius College for the role of Association Secretary.

OTHER SKILLS

- Knowledge in both Qualitative and Quantitative Research Methodologies.
- Understanding of Australian and Danish Ethical Requirements and Application Procedures
- Information and Data Collection.
- Writing and Presenting Reports.
- Australian Full Driving License.
- Languages: English, French, Hindi and Konkani.
- PTE: Superior English Language Proficiency

Other Interests

- Web and Graphics Designing
- Reading
- Travelling
- Watching all kinds of Sports

VISA

- Currently on an Australian PR bridging Visa with No Work Restrictions

Conferences, Presentations and Courses Attended

- **Augmented Reality**, National Institute of Technology, May 16th18th 2013
- **Programmable Logic Controllers**, Mangalore Institute of Technology & Engineering-Bosch Rexroth
- Centre of Competence in Automation Technology, January 8th-15th 2013
- **R-Hex - 6 legged Robot**, Indian Institute of Technology, January 6th-8th 2012
- **Mobile Controlled Robots**, NHAM Institute of Technology, October 10th-11th 2011
- **Presentation on Agricultural Techniques using GIS/GPS**, 4th GIS/GPS Conference Qatar, 2006.
- **Presentation on the Improvement in Agriculture Techniques using Technology**, Ministry of Agriculture Qatar, 2006