ELANGESHWARAN KANNABIRAN

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https://drive.google.com/drive/folders/1f4-r2EGIphGoaTQ0JLbjCIs-UXboim91?usp=sharing

EDUCATION

MSc in Computational Neuroscience & Cognitive Robotics - Merit Birmingham,
The University of Birmingham United Kingdom

- Impressive knowledge in Robot kinematics, control and motion planning, 2D engineering drawing, isometric projection & 3D designs & stimulation of human like mechanical models, SLAM, Image processing and Bio-Signal processing
- Ability to demonstrate the closest Human Cognitive behaviour and action using mathematical models and electronic interface

BE in Medical Electronics Engineering - First Class Bangalore, India
Dayananda Sagar College of Engineering

- In-depth understanding of Medical Imaging in clinical applications, Medical Innovation Process, Rehabilitation, Biomaterials & Artificial Organs, Structural and Functional Anatomy of the Human Body,
- Hands on experience in Analog electronic circuits, Logic circuits, Signal & Image Processing, Engineering Drawing, Workshop Practice along with C, C++ and JAVA

PROJECTS

MSc Project - Dexterous Robot Arm for Human-like Grasping of Objects

- Achieved the closest human like motion on a robotic arm by implementing various human cognitive approaches and identify models and approaches for application in humanoids and other social robots
- Investigated the Human structural anatomy and Cognitive approaches with respect to reach and grasp tasks
- Designed and printed a Robotic Arm with closest Human resemblance (Structurally & Mechanically) - **Siemens NX**
- Computed an Inverse Kinematic model associated with a Computer Vision model - **Python, Excel**
- Established connections between environments and examined reach and grasp task using the Robotic Arm -**Arduino, MATLAB**

BE Project – Telesurgical Bionic Arm

- Designed a cost effective wirelessly communicated Master-Slave Bionic Arm to aid in rural health care
- Built a Robotic Arm with Human resemblance - **Mechanical Workbench**
- Integrated flex sensors, potentiometers and accelerometer fixed on a glove to be worn by a physician as a single input - multiple output circuit - **Electronics Workbench**
- Created a local wifi network using wifi modules - **Arduino**
- Streamlined the sensor output and mapped its analog values to servo angles to control the robotic arm with forward kinematics to provide first aid in remotely - **Arduino, Electronics Workbench**

Personal Projects

- Human colour vision model - **MATLAB**
- Simple A* Algorithm - **Python**
- Path following robot - **Arduino**
- Real time PPG signal display - **Arduino**
- K-means classification - **MATLAB**
- 2D Design of lower limb Exo-skeleton - **AutoCAD**
- Inverse kinematic solver algorithms - **Python, MATLAB**
- Marker Transformation function for motion capture systems -**Python, MATLAB**
- PC Game - **Python**

PUBLICATIONS

Telesurgical Bionic Arm 12/12/2019
International Journal of Engineering and Science Invention (IJESI)

TECHNICAL SKILLS

- MATLAB
- Python
- Arduino
- Python programming
- AutoCAD & SolidEdge (2D Design & Isometric Projection)
- NX designs, Fusion360 (3D Design and Stimulation)
- KiCad (Circuit Analysis, Designing and Debugging at breadboard, perf board and PCB level)

NON-TECHNICAL SKILLS

- Innovative
- Time Management
- Communicative
- Collaborative
- Leadership Qualities
- Critical Thinking & Problem Solving
- Adaptable

CERTIFICATION

- Humaniod Robotics using Raspberry PI
- UR robotics e-series e-learning
- Wearable Robotics-Exoskeletons (Lower Limb)
- Machine Learning onramp (Matlab)
- CATIA V5: DMU Kinematics

WORK EXPERIENCE

Biomedical Engineering Intern 02/2019 – 03/2019

Sagar Hospitals Bangalore, India

- Performed gap analysis of existing and required technology. Analysed the equipment quality control protocol within 5 departments.
- Formulated a preventive and corrective maintenance protocol
- Observed duties of a Biomedical Engineer during medical procedures

INTERESTS

- Body Building
- Drawing & Painting