MANASA PRAVEEN

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EDUCATION

Bachelor of Technology *2020-present*
Manipal Institute of Technology, KA, India *CGPA: 8.68/10*
Major: Biomedical Engineering
Minor: Business Management
GEAR Innovative Intl School, Bangalore, India *2016 - 2020*
Grade 12 - CBSE *Grade- 91.8%*
Grade 10 - CBSE *Grade- 89%*

ACHIEVEMENTS

Manipal Institute of Technology

- Achievers' scholarship for AY 2021-2022
- Achievers' scholarship for AY 2022-2023
- Selected through campus to intern at Novo Nordisk for a period of 6 months

GEAR Innovative Intl School Bangalore, India

- Received school blue- Medal for exceptional balance between sports and academics

PROFESSIONAL EXPERIENCE

Innovation Imaging Technologies Pvt. Ltd. *June 2023- July 2023*
UG-intern

- Closely examined and delved into Cath lab production and assembly
- Obtained training in ladder programming language and coded for minor movements of the Cath lab
- Performed software and hardware testing of Cath labs for final verification and testing.
- Explored and examined various Cath lab procedures by administering Cath labs, on-site, at various hospitals, engaging with doctors and addressing real-time complexities.
- Effectively collaborated with the R&D team and researched the future of employing AI in cardiac imaging

CapGemini *January 2023 - March 2023*
Research intern

- At the CapGemini-affiliated startup- Chorus, I collaborated with the R&D team to develop a pioneering product, by providing an in-depth market analysis.
- I predominantly focused on evaluating the required regulatory frameworks for the product's FDA approval and advised the team on the most efficient pathway to take for the market release.
- In the process, I have studied the FDA and EPA regulations in depth to guide the team.
- Additionally, I gained insights and first-hand experience working with a start-up.

CapGemini *February 2022 - March 2022*
Biomedical intern

- Studied the regulatory landscapes for combination devices in the medical field.
- Researched and learned the application of combination devices in the field of medical devices and biotechnology.
- Analyzed research papers on the different ways a combination device can be released in the market, adhering to FDA regulations.
- My goal was to find the most efficient pathway for a hassle-free approval of the device. Ultimately guiding my team to FDA approval.

TECHNICAL SKILLS

- Knowledge of **regulatory compliance** and the guidelines of the **FDA** and **EPA.**
- Experience in **MeVisLab, 3D Slicer, Profex, LabView and seg3D**.
- Proficient in **MATLAB and Simulink.**
- **Supply chain, marketing and financial management.**
- Basic programming knowledge in **Python and C.**
- Profound knowledge in Digital image and signal processing. FTIR, XRD.
- **AI, pattern recognition, deep learning and artificial neural networks.**
- **Ladder programming language and Embedded systems.**
- **Soft skills:** Quick learner. Analytical skills. Flexible. Problem-solving skills. Determined. Team player. Leadership. Interpersonal communication.

RESEARCH AND PROJECTS

Classification of ovarian cancer using deep learning ***July 2023 - November 2023***

- Obtained digital histopathological data of ovarian cancer and imported it onto MATLAB.
- Utilizing MATLAB's pre-trained deep-learning networks, the data was split in a 90:10 ratio for training and testing respectively.
- I continuously modified the variable factors such as learning rate and batch size based on the error of classification of the trained model during testing and evaluation, to ensure a high accuracy of 89.3%.
- I achieved a precision of 0.91, showcasing the model's high reliability.
- The model was evaluated using a test dataset to measure specificity and sensitivity, >90 and >80 respectively.

Skillset: MATLAB, Deep learning, image processing, convolution neural networks, statistical analysis.

MRI segmentation of the brain ***August 2023 - October 2023***

- MRI of the pre-segmented brain was extracted and pre-processed to remove noise and artifacts by filtration.
- The data was segmented using the active contour segmentation method, employing 3D Slicer software.
- I Engaged in an iterative process of refining the segmentation parameter, based on feedback and evaluation, to achieve optimal outcomes and high accuracy of segmentation.
- The brain was delineated from surrounding structures with 87% accuracy by minimizing energy functions.

Skillset: 3D slicer, image processing, active contour segmentation, MRI

Wearable Sensor System for Parkinson's Disease Monitoring: ***September 2022 - October 2022***

- Implemented real-time algorithms and sensors such as accelerometers and gyroscopes on the Arduino IDE for tremor frequency and amplitude extraction.
- Employed Python libraries (NumPy, pandas, matplotlib) for data analysis and visualization on a PC.
- Developed statistical models to detect early signs of Parkinson's progression and track symptom severity, achieving>82% accuracy.

Skillset: Python, machine learning, Arduino IDE, Embedded systems.

Microcontroller-based heartbeat monitor and pulse counter ***July 2022 - August 2022***

- I built a heartbeat and pulse monitor using the Arduino IDE microcontroller.
- Implemented the code, which was supported by the Arduino. code was written in C programming language,
- A finger-based infrared pulse sensor was utilized to acquire pulse data, and an LCD was utilized for the display of heartbeat per minute.
- The result was a model yielding a high accuracy of >80%, measurements of a diverse dataset of heartbeats.

Skillset: C, Arduino IDE, Microcontroller

TEST SCORES

GRE *Date taken: 2nd September, 2023*
Quantitative- **164/170;** Percentile- **73**
Verbal- **153/170;** Percentile**- 56**
Analytical writing- **4/6 ;** Percentile- **56**

TOEFL *Date taken: 9th September, 2023*
Reading- **30/30** Listening**- 28/30**
Speaking**- 26/30** Writing**-27/30**

CERTIFICATIONS

Healthcare Marketplace
University of Minesotta- Coursera
AI for medicine
Deep learning- Coursera
Python for everybody
University of Michigan- Coursera
Foundation of Digital Marketing and e-commerce
Google- Coursera
Cancer Biology
Johns Hopkins University- Coursera
Introduction to artificial intelligence
IBM- Coursera
Deep learning Onramp
Mathworks MATLAB

EXTRACURRICULARS

- **Basketball team-** Captained my high school basketball team, giving me a sense of collaboration and leadership and I was also the vice-captain of my college basketball team.
- **Volunteering at Savio Sadana-** I volunteered as an activities manager at an old-age home for 1 month, December 2022- January 2023. I took the initiative to keep track of their medical needs, along with providing care and compassion. I spread awareness about insurance schemes and organized regular medical check-ups.
- **Rotaract Club**- I have participated in multiple cloth and blood donation drives.
- **Showstoppers- Dance club, MIT, Manipal**
- **BMESI (Biomedical Engineering Society India, Manipal)-MIT, Manipal**