# PRONEIL SENGUPTA

+91-9972458572 • [proneil.sengutpta@gmail.com](mailto:proneil.sengutpta@gmail.com) •New Delhi, India

[LinkedIn](https://www.linkedin.com/in/proneils/) [GitHub](https://github.com/ProneilS)

# OBJECTIVES

To join a forward-thinking company to apply an engineering background and passion for coding in solving real-world problems through innovative solutions. Motivated to work on impactful projects that enable continuous technical and professional development. Focused on building applications and systems that contribute to organizational success, while embracing challenges that drive growth and adaptability. Dedicated to contributing within a collaborative environment where creativity, innovation, and purpose align with the company’s long-term goals.

# EDUCATION

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| --- | --- | --- | --- |
| **Program** | **Institution** | **Grade** | **Year** |
| Highschool | Bayside Christian College | 75% | 2021 |
| B.E(Electronics and Instrumentation Engineering) | Siddaganga Institute of Technology | 7/10(CGPA) | 2022-2026(ongoing) |

# PROJECTS & WORK EXPERIENCE

* **Customer Service Associate, Woolworths, Supermarkets [Australia] -** Worked at Woolworths Supermarkets as a Front-End Customer Service Associate, assisting customers at checkout counters, self-service kiosks, and the front desk. Responsibilities included operating the POS system, handling transactions and returns, and resolving customer queries in a fast-paced retail environment. Developed strong communication and people skills while ensuring a smooth and efficient shopping experience for customers.
* **Robotic Hand -** Built a robotic hand capable of performing traditional yoga mudras using servo motors and precise finger articulation. A physical LED screen displayed the name of each mudra in real-time. Programmed using Arduino IDE on an offline microcontroller for standalone operation.
* **AI powered Stethoscope (ongoing) -** Developed an AI-based stethoscope using ESP32 and INMP441 mic to classify heart sounds and detect murmurs from four key valve positions — aortic, pulmonary, tricuspid, and mitral. Enabled real-time, offline inference using spectrogram features and multi-position analysis. Entire system coded in Arduino IDE.

# SKILLS

**Programming Languages:**

* C (used for microcontroller firmware via Arduino IDE)
* C++
* Python (for data analysis, AI model training, and prototyping)
* MySQL (for cloud-based storage and post-processing of bio signal data.)
* Kotlin basics

**Embedded Systems & Tools:**

* Arduino IDE (firmware development for ESP32 and other microcontrollers)
* ESP32, Arduino Uno, I2S microphones (INMP441)
* Serial communication, sensor interfacing, and hardware debugging

**AI & Machine Learning:**

* Deep learning model development using CNNs for heart sound classification
* Signal processing for real-time heart sound analysis (spectrograms, FFT)
* Model training using frameworks like TensorFlow and Keras
* Embedded AI inference on low-resource devices

**Other Tools & Technologies:**

* Git & GitHub
* MATLAB basics
* Basic Android app development
* Unreal Engine