

# SWAPNIL

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## Education

### Thapar Institute of Engineering And Technology

B.E. Computer Science & Engineering

Relevant Courses: Web Development, Algorithms & Data structures

Patiala, Punjab

Sep 2020 – Jun 2024

## Projects

### OmniBoard: A Multi-Gaming board for Specially Abled. [GitHub](#) [Demo Videos](#)

Apr'23 - Present

- An **all-in-one** smart board that combines traditional board games like chess, ludo, and more with motorized components and self-moving pieces
- Omniboard's **intelligent algorithms** handle moves, states, and victories smoothly.
- **Real-Time Web Interface:** Witness the physical board spring to life with real-time piece movements on the web.
- [Tech Stack](#) IoT, Next JS, WebSockets, MongoDB, PyTorch, TensorFlow

### SafeStep: Early Fall Prediction for Senior Citizens with IOT [GitHub](#) [Demo Video](#)

Jul'23

- Developed an IoT device capturing **real-time movement data** incorporated with **ML model** for fall prediction
- Designed an advanced prevention system upon detection of fall features **alarm and inflating jacket**
- Enhanced elderly safety device engineered for movement tracking along with prevention call for **rapid assistance**
- [Tech Stack](#) IoT, PyTorch, TensorFlow, Python

### Argri-Site: Weed detection and removal drone [GitHub](#)

Dec'22

- An autonomous drone with Raspberry Pi and cameras for real-time weed identification using machine learning.
- Aims to provide farmers with herbicide application guidance, potentially revolutionizing weed control in agriculture.
- [Tech Stack](#) NextJS, IoT, Machine Learning, Python, Google API

## Experience

### Thapar University

Summer Intern

Jun'23 – Jul'23

- Developed a **Help Stick** for senior citizens, an IoT-based device leveraging CNN + LSTM architecture for early fall prediction of senior citizens.
- Designed and implemented a deep learning model to enhance '**HELP-STICK**'s accuracy in predicting potential falls.
- [Tech Stack](#) IoT, Python, PyTorch, TensorFlow

### Samsung Prism

Research and Development Intern

Sep'22 – Apr'23

- Working on Context aware response and prioritization in Multiparty conversations
- Gathered a huge vocal data set for the training and testing this model by using **NLP** as part of this project
- [Tech Stack](#) Python, NLP (Natural Language Processing)

## Technical Skills

**Languages:** C++, TypeScript, HTML/CSS, JavaScript, SQL, PLSQL, Python, LaTeX

**Developer Tools:** VS Code, Vim, Git, GitHub, Figma, Intelli J

**Technologies/Frameworks:** React, Express, Flask, Docker, Azure, Nginx, Websockets, REST API's

**Coding Profiles:** [Leetcode](#)

## Achievements

### Google

Achieved a global rank **4780** in Code Jam and Cleared both qualification round as well as the Round 1

Aug'22

Achieved a global rank of **8429** in Hash Code

Aug'22

### Advent of Code

Participated and solved all problems with all 50 stars

Dec'22