SWAPNIL DUBEY

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EDUCATION

The Pennsylvania State University — **University Park, PA**

Bachelor of Science in Electrical Engineering — *Class of 2021*

Bachelor of Science in Astronomy and Astrophysics — *Class of 2021*

WORK EXPERIENCE

Trusine Solutions Pvt. Ltd. — **Delhi, India**

Embedded Software Intern — **May 2019 - Aug 2019**

- Used C++ to run a Graphical LCD using an STM32 series microcontroller
- Implemented in over 100 units of Voltage Regulator boxes to display data across India

Electrical Engineering Intern — **May 2017 - Aug 2017**

- Built microcontroller circuits to run remote monitoring systems
- Used Embedded C to retrieve signals from Li-Ion Battery Management System to a Micro-Processor
- Implemented these tools to manage multiple power sources for uninterrupted supply in remote areas

PROJECTS

Downhole Electro-Hydraulic Control System — **Jan 2020 - May 2020**

- Designed a mobile and touch interface for the Control System
- Developed a program in Python for Raspberry Pi to operate the Brushless DC Motor
- Designed and implemented wire schematics on the breadboard
- Resulted in a 60% reduction in cost

Computer Vision — **Jan 2020 - May 2020**

- Developed a program to extract objects from an image and analyze their spatial properties
- Applied Hough Transformations for Image Processing and Edge Detection
- Mapped 2D images onto a 3D world using MATLAB

Acoustic Levitation — **Aug 2019 - Dec 2019**

- Levitated small pieces of Styrofoam using transducers facing opposite directions
- Designed the power supply with a square wave generator using an NE555 timer microchip
- Achieved continuous stable levitation while maintaining equipment portability

Light Sensitive Theremin using Photo-Diodes — **Aug 2019 - Dec 2019**

- Designed Theremin user interface with NI MyDAQ and NI LabVIEW
- Developed light sensitivity, tone, and equalizer controls, with the option to output a sound file
- Reduced costs by more than 50%

EXTRA-CURRICULAR

Student Space Programs Lab (SSPL) — **Jan 2018 - May 2018**

Amateur Rocket Project

- Designed the wiring diagrams and circuits
- Procured acceleration, location, and other data metrics using the rocket
- Transmitted the data back to the base station

Nittany Data Labs — **Aug 2017 - Dec 2017**

Twitter Mood Analysis

- Designed a Python script to determine a population's emotional reaction in under 5 seconds

ECG Analyzer

- Attained over 80% classification accuracy on a noisy sample

SKILLS

Programming: Embedded C/C++, MATLAB, NI LabVIEW, Python, HTML/Javascript/CSS, Sci-Py

CAD Software: LTSpice, Proteus, NI Multisim, SolidWorks