

## Contact

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## Online Portfolio

**Personal Website:**  
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## Education

**Bachelor of Science  
Mechanical Engineering  
University of Maryland  
College Park, MD, USA**  
GPA: 3.5/4.0

**Calvert Hall College  
High School  
Towson, MD, USA**  
GPA: 4.0/4.0

## Skills

### Software & Programming

3D Design (SolidWorks,  
Inventor, Fusion360)

MATLAB

Microsoft Office

Python, C++

LabView, Simulink

ANSYS Workbench (FEA)

### Technical Skills

Product and Process Design  
DFMA  
Lean Manufacturing  
Six Sigma  
Human Reliability Analysis  
ASME Y14.5 GD&T

### Machines

3D Printing, Bandsaw,  
Lathe, Solder, CNC

### Languages

Fluent in English & Nepali  
Conversant in French & Hindi

# Nikesh Shrestha

## Bachelor of Science in Mechanical Engineering

### Summary

Mechanical Engineering graduate from the University of Maryland – College Park (Aug. 2018 – Dec. 2021) with experience in research and engineering projects. Awarded multiple awards for excellence in education. Experienced various technical and soft skills through courses, projects, self-education, and involvement in multiple organizations.

### Work Experience

**Nano Biochip for Disease Detection, Diagnosis and Monitoring** (New Jersey Institute of Technology) (NSF REU) [Jun. 2020 – Aug. 2020]

- Research Assistant in NJIT Advanced Energy Systems and Microdevices Laboratory.
- Developed *MATLAB* algorithm for autonomous measurement of wetting angles from images.
- Investigated the visualization and characterization of fluid drop on a surface treated PDMS, and *fluid flow dynamics of in microchannel* for implementation in passive plasma separation.

**Undergraduate Teaching Assistant** (University of Maryland) [Aug. 2020 – Dec. 2021]

- Undergraduate Teaching Assistant for Electronics and Instrumentation II; Vibrations, Controls and Optimization I; Introductory C++ & MATLAB Programming Course.
- Led lab and studio sessions with 20 to 30 students.
- Guided students with understanding course concepts and applying them to assignments.

### Technical Experience

#### Project: Redesigning Braking System for Triathlon Bikes

- Team Leader and Team Scribe.
- Designed and built a hydraulic braking system integrated inside aerobars for Triathlon bikes.
- Implemented the *Product and Process Design Principles & Lean Manufacturing Principles*.
- Used *MATLAB*, *SolidWorks*, *Stack-up* and *GD&T* for design, analysis, and simulation.
- Used *additive and subtractive manufacturing* machines for assembly.

#### Project: Time Series Analysis: Location Prediction of Dynamical System

- Applied *Machine Learning Algorithm* to forecast the location and orientation of a Navy Battleship.
- Implemented Supervised Probabilistic Model: *Variational Sparse Gaussian Processes*.
- Utilized *PyTorch* and Probabilistic Programming language *PyMC3*.

#### Project: Designed and built an Autonomous Robot

- Designed and built a sensor car that autonomously follows the operator.
- Utilized *Arduino Uno microcontroller*, *PIR* and *Ultrasonic sensors*, and *actuators (DC and Servo Motors)* to autonomously detect and follow the operator at various speeds.
- Programmed using *Arduino IDE* and *Processing 3* for operation and demonstration.

#### Project: Design and Model the Structure of a Helicopter

- CAD Designer and Team Scribe.
- Successfully reconstructed all internal and external parts of a toy helicopter.
- Used *SolidWorks* to design *complex shapes* and parts of the toy.
- Carried out Finite Element Analysis on rotor, blades and critical internal parts to determine its breaking strengths.

### Awards & Honors

- National Science Foundation REU Fellowship
- Dean's List for Outstanding Students
- Office of Multi-ethnic Student Education Academic Excellence Award
- G. Lee and Lou Ann Lushbaugh, Jr. Endowed Scholarship
- Sean and Sarah Durbin Scholarship
- Bechtel Corporate Partner Scholarship