Nikesh Shrestha

sthan18@terpmail.umd.edu | 2617 Luiss Deane Drive, Parkville MD, 21234 | 410-419-2169

Education:

University of Maryland, College Park Mechanical Engineering (GPA: 3.6/4.0) (August 2018 – Present)

Skills:

- Programming: MATLAB, HTML, Python, Simulink, C++, JAVA
- Software: SolidWorks, Autodesk Inventor, AutoCAD, Ansys Fluent, COMSOL Multiphysics, Microsoft Office
- Languages: English, Nepali, French, Hindi
- Soft Skills: Communication, Creativity, Critical Thinking, Leadership, Organization, Teamwork, Work Ethic

Research Experience:

Nano Biochip for Disease Detection, Diagnosis and Monitoring (New Jersey Institute of Technology)

- Participated in NJIT REU-2021 Program. (June 2021 – August 2021)
- Worked in Dr. Eon Son Lee's lab (NJIT Advanced Energy Systems and Microdevices Laboratory).
- Researched the implementation of surface tensions in a microchannel for passive plasma separation.
- Developed a MATLAB algorithm for semi-autonomous measurement of wetting angles on PDMS surface.
- Investigated the visualization and characterization of fluid drop on a surface treated PDMS material, and flow dynamics in PDMS microchannel.

Teaching Experience:

Undergraduate Teaching Assistant for Electronics and Instrumentation II (University of Maryland)

- Led lab sessions with 20 to 30 students. (August 2021 - Present)
- Graded Lab Reports.
- Guided students with understanding course concepts and assignments.

Undergraduate Teaching Assistant for Vibrations, Controls and Optimization I (University of Maryland)

- Helped students with homework assignments and understanding concepts. (January 2021 – May 2021)
- Graded Homework Assignments.
- Proctored examinations.

Undergraduate Teaching Assistant for C++ & MATLAB Programming course (University of Maryland)

- Lead Studio sessions: reviewed concepts from lecture. (August 2020 – December 2020)
- Graded Homework Assignments and in-class Studio projects.
- Helped students understand lecture material and apply them to homework assignments during office hours.

Technical Experiences:

Project: Time Series Analysis: Location Prediction of Dynamical System (September 2021 – December 2021)

- Applied Machine Learning Algorithm to predict the location of a Navy Battleship.
- Implemented Supervised Probabilistic Model: Gaussian Processes for prediction.
- Utilized Probabilistic Programming language in Python: PyMC3.

Project: Redesigning Braking System for Triathlon Bikes (September 2021 – December 2021)

- Team Leader and Team Scribe.
- Designed and built a hydraulic braking system for Triathlon Bikes accessible from Aero bars.
- Adapted the Product Development Process.
- Demonstrated the prototype design to wide campus audience.
- Used MATLAB, SolidWorks for design.
- Used 3D printing technology and machining tools for construction of brake system.

Project: Designed and built a Sensor Robot (January 2021 – May 2021)

- Designed and built a sensor car that autonomously follows the operator.
- Examined and studies various sensors and microcontroller for operation.
- Programming the microcontroller to follow a person.
- Improved research, self-learning, organization, creativity, work ethic skills.

Project: Redesign a Power Drill (September 2020 – December 2020)

- Team Scribe; Team Leader while exploring the transmission and electrical component of the drill.
- Studied all the functional and physical components of a DCD701 Power Drill.
- Researched areas that can be improved and engineered changes in those area.
- Improved thermal management of the drill at the most used orientation of the drill (reverse airflow).
- Improved teamwork, collaboration, presentation, time management, organization skills and attention to detail.
- Used MATLAB, AutoCAD, Excel for bi-weekly reports.

Project: Design and build a fully functioning Over Sand Vehicle (OSV). (January 2019 – May 2019)

- Team Scribe; Team Leader for Design team; Team member for Build Team.
- Designed and Built an OSV which lifts a three-pronged object and identifies its magnetic property.
- Gained experience using Autodesk Inventor, and programming language for Romeo V2 Board.
- Used Inventor to design the skeletal structure of the OSV.

Project: Construct the most efficient truss support. (September 2019 – December 2019)

- Constructed light-weighed Truss structure which can support the highest load.
- Learned the importance of planning and calculations necessary in a project.
- Created a computer aided design of the truss with animation at failure.

Project: Design a skeletal structure of a toy helicopter using CAD. (September 2019 – December 2019)

- Reconstructed all parts of a fully functioning Toy Helicopter using CAD.
- Worked with other team members to design a Toy Helicopter using SolidWorks.
- Team Scribe: checked the status of progress and ensured everything was completed before the deadline.

Volunteer/ Work Experience:

Johns Hopkins Elder Plus (4940 Eastern Ave, Baltimore, MD 21224), (June 2017 – September 2017)

- Recreational Activities Assistant

Cultural Academy for Excellence (2705 Queens Chapel Rd, Mt Rainier, MD 20712), (January 2019 – May 2019)

- Tutored elementary school kids attending Prince George County Public School

Wings Things N More (Parkville, Maryland) (June 2015 – Present)

- Closing Assistant Manager, Cashier and Cook

Amazon Warehouse (Nottingham, Maryland) (December 2020 – August 2021)

- Warehouse Team Member in Sort Center

Flynn O'Hara Uniforms (Parkville, Maryland) (June 2018 – August 2019)

- Main Embroiderer and Cashier

Clubs and Organizations:

- AMSE (American Society of Mechanical Engineers)
- NSA (Nepalese Student Association): Treasurer
- NSAFC (Nepalese Student Association Football Club)
- CEC United (Local Baltimore Soccer Club): Treasurer and Player
- Culinary Club: Club Member