Nikesh Shrestha, B.S.M.E.

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

LinkedIn: https://www.linkedin.com/in/nikesh-shrestha-3518ba11b/ | **Personal Website:** https://nikeshshrestha2000.github.io/

Objective

Aspiring Mechanical Engineer with a bachelor's in mechanical engineering from the University of Maryland – College Park with multiple awards for academic excellence. Background in product and process design, microdevices research, and design of electro-mechanical and autonomous systems. Looking for a position where I can excel as a Process Engineer, bringing years of thorough learning experience and a creative, inquisitive, and enthusiastic approach to my work.

Education

B.S. Mechanical Engineering University of Maryland, College Park, MD (Aug. 2018 – Dec. 2021)

Skills

- **PROGRAMMING:** MATLAB, C++, Python, HTML5, Simulink, LabView
- **TECHNICAL SKILLS:** DMFA, Lean Manufacturing, Six Sigma, GD&T (ASME Y14.5), Human Factor Analysis
- **SOFTWARE:** SolidWorks, Autodesk Inventor, Fusion 360, Ansys Workbench (FEA), Microsoft Office
- **MACHINING:** 3D Printing, Bandsaw, Lathe, Solder, CNC
- **LANGUAGES:** Fluent in English & Nepali, Conversant in French & Hindi

Work Experience

NJIT Advanced Energy Systems & Microdevices Laboratory (Jun. 2021 – Aug. 2021)

Research Assistant (NSF REU Fellowship)

- Researched the implementation of surface tensions in a *microchannel* for *passive plasma separation*, and investigated the *visualization and characterization* of fluid drop on a surface treated PDMS material
- Successfully developed a *MATLAB algorithm* for *autonomous detection and measurement* of contact angles from images to increase *research efficiency* by *reducing time and errors* associated with manual measurement

Undergraduate Teaching Assistant (Aug. 2020 – Dec. 2021)

- **Courses**: Electronics and Instrumentation II; Vibrations, Controls and Optimization I; Introductory C++ & MATLAB Programming
- Led 30+ student lab sessions by using *mentorship ability* and *presentation skills* to ensure understanding of course concepts and application to assignments/ lab reports

Technical Experience

Project: Redesigning Braking System for Triathlon Bikes (Sep. 2021 – Dec. 2021)

Team Leader and Team Scribe

- *Increased safety* of triathletes while braking in aero position by *designing a hydraulic braking system* inside aerobars and utilizing engineering principles: *Product and Process Design & Lean Manufacturing*
- Utilized *MATLAB*, *SolidWorks*, *Stack-up*, *GD&T, additive and subtractive manufacturing* machines for design, analysis, simulation, and assembly
- Supervised *project timeline* and ensured *quality of product* to *maximize customer satisfaction*

Project: Autonomous Robot (Jan. 2021 – May 2021)

- Fabricated a robot that autonomously detects and follows the operator at various speeds by programming *Arduino Uno microcontroller, PIR and Ultrasonic sensors*, and *actuators (DC and Servo Motors)*
- *Networked data* from *Arduino IDE* to *Processing 3* for *visual demonstration*

Project: Time Series Analysis: Location Prediction of Dynamical System (Sep. 2021 – Dec. 2021)

- Coded Supervised Probabilistic Model (Variational Sparse Gaussian Processes) using Python3 libraries (PyTorch, Scikit-learn, PyMC3) to forecast the 6D location and orientation of a Navy Battleship
- Achieved *91% testing accuracy* average for 6-degrees within a *95% confidence bound* with the *model run time of less than 30 minutes for 20,000 data points*

Project: Design and Model the Structure of a Helicopter (Sep. 2019 – Dec. 2019)

CAD Designer and Team Scribe

- Successfully reconstructed all parts of a toy helicopter, including *complex shapes*, using *SolidWorks*
- Carried out *Finite Element Analysis* on *critical internal and external parts* to *analyze structural integrity*