Nicholas Pho

412-478-7693 | Email | LinkedIn | Portfolio

PERSONAL PROFILE

Ambitious, innovative and dedicated professional Biomechanical Engineer with 2 years of work experience in R&D for medical products. Highly skilled in 3D CAD modelling, data analysis with R, PowerBI, and Python, FE Analysis, DFMEA, Design Optimization, and manufacturing techniques. Seeking to apply research and internship experience into the industry. Pursuing hands on technical profession in sustainability, medical product development, operations, and project engineering. Has the ability to work in an independent or collaborative environment.

EDUCATION

University of Pittsburgh | Swanson School of Engineering | Pittsburgh, PA August 2020 – Expected Graduation: May 2025
*Bachelor of Science in **Bioengineering** | Minor in **Mechanical Engineering*** GPA: 3.45

AWARDS

Benjamin A. Gilman International | Cultural & Educational Fund | African Heritage Room Committee Scholarship May 2024

- Studied Abroad in South Africa through University of Pittsburgh's program, Empathic Global Leadership for Social Change
- Awarded $9,000 that fully funded my leadership experience in Johannesburg and Cape Town

2021 First Year Engineering Conference: Best Overall Mechanical Engineering Science Paper April 2021

- "The Hemolung: An Alternative to Traditional Mechanical Ventilators"

Crossroads Foundation Scholarship August 2016-May 2020

- Participated in more than 480 hours of self-development activities and volunteer work through the program

WORK EXPERIENCE

Mechanical Design Engineering Intern, *Human Engineering Research Labs, Pittsburgh PA* June 2024 - Present

- Researched, designed, and fabricated prototypes for projects within the Department of Veterans Affairs Technology contributing to the successful development and advancement of several projects.
- Presented fabrication ideas and progress to inventors, incorporating feedback to align with the project goals.
- Redesigned the assistive device, Safer Seat using FEA optimization in SolidWorks without losing any of its functionality and mechanical properties; decreasing size by 50%, and increasing load capacity by 50%
- Carried out end-user study to refine the modifications made to assistive devices through IRB
- Conducted comprehensive material testing on various 3D printing materials, advising users on the optimal materials based on device functionality and use cases.

Human Factors Engineering Co-op, *ZOLL Medical, Pittsburgh PA* June 2022 – August 2023

- Demonstrated a thorough understanding of user-centered design, root cause analysis, heuristic evaluations, study design, technical writing, and statistical analysis in both verbal and written form
- Developed and implemented usability testing to validate and verify medical products (both hardware and software)
- Supported the evaluation and data analysis in existing and proposed medical products
- Coordinated and lead a 400-person **clinical subject testing**, and data analysis as a project manager

Resident Assistant, *University of Pittsburgh* August 2021-May 2022

- Developed and conducted programs on diversity, chemical abuse, personal development, relationships, and academic performance for 50 students
- Planned and implemented programs to assist international and transfer students in transitioning to campus

Corp. Member, *JumpStart, University of Pittsburgh, Pittsburgh, PA* May-August 2021

- Develop the basic foundations of education and learning by working with children as an AmeriCorps member

LEADERSHIP AND SERVICE

Engineers Without Borders, *Bolivia Team, University of Pittsburgh* August 2020 – Present

- Served as ***Vice President*** liaison between the University and the Professorial Chapter
- Served as ***Social Media Chair***; maintained social media and chapter website targeted towards student body, and for professionals in engineering
- Communicated with professional contacts in-country to organize two remote implementations over the course of the pandemic
- Fundraised $35,000 three years in a row, developing grant writing and networking skills

Vietnamese Student Association, *Vice President of External Affairs, University of Pittsburgh* May 2021- May 2022

- Represented the club to other external clubs at the University of Pittsburgh and at other external organizations
- Helped other members with event planning, club finances, and public relations

Northeast Union of Vietnamese Student Association, *Senator, Regional Organization* May 2021- May 2022

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- Represent the University of Pittsburgh in the Northeast region through events and build relationships with other school's Vietnamese Student Associations

GLOBAL EXPERIENCES

Empathic Global Leadership for Social Change, *South Africa, Study Abroad, University of Pittsburgh* May 2024

- Traveled to Johannesburg and Cape Town, and engaged in an experiential learning course designed to provide cultural conscious thinking to design solutions to problems that impact humanity
- Conducted team-based observation, data collection, and SWOT analysis to understand local, regional, and international problem-solving approaches that companies and organizations encounter

Carijana Partnership, *Bolivia, Community Project*, *Engineers Without Borders* August 2022

- Traveled to the community of Carijana, Bolivia as ***Education Lead*** and supported with the construction of 15 latrines, and implemented educational lessons to the local school to promote public health and hygiene
- Developed and performed technical & public health data collection and overseeing project operations

PROJECTS & RESEARCH EXPERIENCE

Translational Tissue Mechanics Lab*, University of Pittsburgh, Independent Study* December 2020-Present

- Translate programming code from Mathematica to **Python** under the advisory of Dr. Steven Abramowitch and in collaboration with UPMC Magee Women Hospital
- Conducted comparative FEA using FEBio to assess the suitability of polypropylene vs. polyurethane implants in treating stress urinary incontinence, focusing on material stress performance and biomechanical compatibility
- Develop 3D models using Python and **Houdini** that **simulate** tissue function for obstetric health
- Implemented Meta's object detection algorithm, Detectron2, for **machine learning** to auto-segment 3D Pelvic Geometries from 70 MRI scans

Computer Applications of Bioengineering*, University of Pittsburgh, Semester Project* August 2021-December 2021

- Development of an Eye Gaze Tracking System through the use of Extraocular Muscle Activity for Diagnosis and Treatment of Autism Spectrum Disorder
- Assisted with the coding of the MATLAB GUI which visualized the data acquired from the movements of the eyes

The Safer Seat

- Designed an innovative vehicle seat cover that assists individuals with impaired mobility, balance, or strength in safely transferring into and out of vehicles using SolidWorks an
- Developed prototype by creating the next iteration of the working prototype using high-fidelity machining and manufacturing; ongoing efforts to refine the design and conduct further research
- Implemented usability study design to ensure the device is designed to not only be safe but also easy to use, improving on current mobility transfer techniques

SKILLS

Languages: English (Fluent), Vietnamese (Conversational)
Programming Languages: Python, MATLAB, C, R, Visual Basic in Applications
Software: CAD (AutoDesk Inventor Certification, and SolidWorks Certification), 3D Modeling (Blender, Houdini), Finite Element Analysis (FEBio, Abaqus), PowerBI, HitFilm Express, Figma, Wix Website Design, Canva Social Media/Marketing Design, Microsoft Office, Prompt Engineering
Hardware & Manufacturing: DAQ, Circuit Design, 3D Printing (FDM, PolyJet, SLA, SLS), High-fidelity Manufacturing, Carpentry, PCB laser, Manual Machining, Welding, Sewing, Molding, Woodworking