Nicholas Pieper

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EDUCATION

Vanderbilt University – School of Engineering – Class of 2021

Bachelor of Engineering – Electrical Engineering, Biomedical Engineering – Minor in Computer Science

- GPA: 3.89/4.00, Deans List achieved for all completed semesters
- Concentration in Computer Engineering and Microelectronics
- Coursework including analog & digital circuits, management, computer science, computer organization

EXPERIENCE

Institute for Space and Defense Electronics (ISDE) — **Vanderbilt University**

Undergraduate Researcher — *August 2019 -- Present*

- Study the prevalence and effects of single event upsets and total ionizing dose on electronic circuits
- Research mechanisms of errors and propagation in electronic circuits
- Design software programs and hardware circuits for performing experiments and acquiring data
- Process data from experiments, produce meaningful results, analyze, and discuss with research group

Vanderbilt Aerospace Design Lab (VADL) — **Vanderbilt University**

Electrical Engineer — *January 2020 – Present*

- Member of historically successful (7-time national champions of NASA SLI) aerospace design team
- Involved in brainstorming, design, and iteration of full-scale rocket and planetary landing system with strict constraints on time, space, mass, and cost with numerous self-imposed requirements
- Vital in electrical design of mission critical systems including deployment and control of multiple recovery systems

Computer Assisted Otologic Surgery (CAOS) Lab — **Vanderbilt University**

Undergraduate Research Assistant — *January 2019 – December 2019*

- Collaborate in improvement of haptic cooperative surgical assistance device
- Focus on mitigating risk and improving surgeon efficiency for mastoidectomy procedures
- Design and propose new 3D housing models and robotic system mounting methods via Solidworks
- Analyze results of testing robotic braking systems and brainstorm solutions in production

Mehringer-Pieper Innovations, LLC — **Jasper, IN**

Co-founder and Co-owner — *February 2017 – Present*

- Co-founded Mehringer-Pieper Innovations, LLC for development of device application 15/977,652
- Collaborated with co-owner to ideate and design a surgeon-machine control system to improve surgeon comfort, improve patient outcomes, and reduce risk of surgeon and machine error leading to complications
- Prototyped working concept devices with limited resources and minimal machining devices
- Programmed control systems that allow for multiple methods of endoscope control via an accelerometer
- Collaborated with professionals in healthcare for technical details and design specifications, and worked with community organizations and entrepreneurs for materials, financial assistance, and technical expertise

LEADERSHIP

Vanderbilt Medical Innovation Lab — **Vanderbilt University**

Surgery MedTech Team — *September 2018 – June 2019*

- Guided and oversaw design process for surgical device innovation with graduate medical school students and healthcare professionals, including multiple doctors at VUMC, whom we later presented to
- Consulted with business professionals to determine the market potential and value proposition of the project for healthcare settings and device manufacturers

SKILLS & INTERESTS

C, C++, Python, Assembly, Arduino programming, embedded systems programming
Computer-Aided Design (Autodesk Inventor, SolidWorks, Autodesk 2D CAD, Autodesk EAGLE for PCBs)
Enjoy hiking, paddle boarding, cooking, playing strategy games, and learning about computers