Clark Zhang

Mechanical Engineer Junior
with hands-on technical experience
Top Secret Security Clearance
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EDUCATION

VANDERBILT UNIVERSITY

SCHOOL OF ENGINEERING *(2021-2025)*
Nashville, Tennesee

- **Awarded the Cornelius Vanderbilt Scholarship (full-tuition)**

Major: Mechanical Engineering, Mathematics
Minor: Computer Science
Digital Fabrication

SKILLS

CERTIFICATIONS

- SOLIDWORKS Associate in Mechanical Design

COMPUTER SKILLS

Taken university-level class in:
Python, Java, C++, R, MatLab, SolidWorks, Fusion360, Ansys FEA

Self-studied:
CATIA, Autodesk Inventor, LaTeX, Bash, ABINIT, Gnuplot, Perl, STELLA, Racket

MECHANICAL ENGINEERING

Taken university-level class in:
ME Core (Statics, Dynamics, Machine Analysis, Materials, Thermodynamics, Circuits, Mechatronics, Fluids Mechanics, System Dynamics), Risk and Reliability, Finite Element Analysis

Tool Experience:
Expert: 3D-Printer (FDM, SLA), Laser/Plasma Cutting, Mill, Lathe, Band saw, Drill Press, Power/Air/ Hand tools
Intermediate: Oxy Welding, CNC Mill

AWARDS

Achievement in Optics and Photonics Award by National Capital Section of OSA, Optical Society of America, and IEEE Photonics Society
For 'recognizing an exceptional engineering contribution impacting optic technology'

Spellman HV Clean Tech Competition 2019
Global Semifinalist

EXPERIENCE

INTERNSHIP AT NORTHROP GRUMMAN

(May 2023 – July 2023)
NORTHROP GRUMMAN, SPACE PARK – MECHANISMS AND DEPLOYABLES PRODUCTS
Participation: 40 hours per week for 10 weeks
Description: (NDA) Performed integration and testing of a gimbal actuator. Modeled and drafted parts in CATIA. No further details available, subject to NDA.

INTERNSHIP AT NASA GODDARD SPACE FLIGHT CENTER

(June 2022 – August 2022)
NASA – CLIMATE AND RADIATION LABORATORY (CODE 613)
Participation: 40 hours per week for 12 weeks
Description: Collected and studied geostationary satellite data to create a Machine Learning dataset for classifying aerosol and cloud types. Analyzed this dataset to ensure it was representative of the global temporal and spatial distribution of aerosols. Trained a Random Forest model with the dataset to distinguish cloudy and clear sky, as well as aerosol type with high accuracy.

PRESIDENT OF VANDERBILT MOTORSPORTS - FORMULA SAE

(September 2021 – Present)
VANDERBILT UNIVERSITY
Participation: 25 hours a week
Description: Design, fabricate, assemble, test and tune an IC racecar for the FSAE competition with a team of ten. Model in SolidWorks, machine parts, and integrate them onto the car. Manage the team, maintain organization, find sponsors, recruit new members, set up skill workshops. My specialty is suspension design, optimizing the geometry for smoothness and responsiveness.

VICE PRESIDENT OF EQUIPMENT FOR DESIGN STUDIO

(September 2021 – Present)
VANDERBILT UNIVERSITY
Participation: 4 hours a week
Description: Oversee Vanderbilt Design Studio, a joint makerspace and 3D-printing studio, manage the equipment and clean the space, advise peers on their projects as a mentor.

STRUCTURAL LEAD FOR VANDERBILT SATELLITE CLUB

(August 2022 – May 2023)
VANDERBILT UNIVERSITY
Participation: 4 hours a week
Description: Launch several high-altitude weather balloons. Analyze the loads and stresses imposed on the balloon, design the balloon architecture and payload layout. Frequent use of CAD software, hand tools, and 3D-printers for prototyping and testing.

PUBLICATIONS

FIRST AUTHOR:

- **INTERNSHIP IN DIVISON OF BIOSTATISTICS, UNIVERSITY OF MINNESOTA**
  Participation: 30 hours per week for 10 weeks
  Citation: Clark Zhang, Haitao Chu, Veronica Pei, Jason Zhang. Laboratory effects of COVID-19 Infection in pregnant women and their newborns: a systematic review and meta-analysis. *Frontiers Global Mat.*, 2021, 2 (https://doi.org/10.3389/fgwh.2021.647072)

- **INTERNSHIP IN NATIONAL GRAPHENE RESEARCH AND DEVELOPMENT CENTER**
  Participation: 35 hours per week for 12 weeks
  Citation: Clark Zhang, Xuan Luo. DFT screening of metallic single-replacements for lead-free perovskites with intrinsic photovoltaic functionalities. *RSC Adv. 2020.* 2020, 10, 23743-23748 (https://doi.org/10.1039/D0RA03034A)

CO-AUTHOR:

- **INTERNSHIP IN SCHOOL OF ENGINEERNG, UNIVERSITY OF MARYLAND**
  Participation: 40 hours per week for 10 weeks
  Citation: D. Liu, C. Chen, Y. Zhou, Y. Bao, S. He, H. Huang, C. Zhang, B. Foster, T. Li, L. Hu. 3D-Printed, High-Porosity, High-Strength Graphite Aerogel for Sustainable Packaging. *Small Methods*, 2021, 7, 5 (https://doi.org/10.1002/smtd.202001188)