Han Ngoc Diem Duong

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EDUCATION

Illinois Institute of Technology Chicago, IL
B.S. Aerospace, Mechanical & Electrical Engineering Expected May 2025
Minor in Air Force Aerospace Studies

- **Coursework:** NASA+SAElectric Vehicle Design, Thermodynamics, Mechanics of Solid, Computational Mechanics, Dynamics, Material Science, Design for Innovation, Accelerated Introduction to Computer Science, Circuit Analysis

SKILLS AND TECHNOLOGIES

Tools & Technologies: MATLAB, Simulink, Python, C++, JavaScript, NASA CEA, ANSYS, AutoCAD, SolidWorks, Inventor, Fusion360, Composite Layup, CNC Machine, Laser Cut, Welding, 3D Printing, PCB Design and Fabrication
Licenses & Certifications: Remote Pilot License, Tripoli Level 1& 2 Certification, HAM Radio License

WORK EXPERIENCE

NASA L'SPACE Academy MCA Sept 2022 – Present
Thermal Engineer & Astronomer

- Modified a low-mass, high-reliability thermal management system with a 15-year life in a Near-Earth orbit environment that uses pumped liquid ammonia to perform heat collection, transportation, and rejection
- Performed material trade study for chemical coating and thermal path on the solar panel to increase heat insulation by 300% and emissivity by 88% and provide sufficient power for orbital spacecraft

Illinois Tech Motorsports FSAE Sept 2022 – Present
Electrical Engineer

- Researched and developed a one-way communication radio telemetry system to send and receive data between radio modules for racing cars within 8 km
- Designed a preliminary segment for battery packaging with aluminum heat sink on Fusion360 to reduce cell-to-cell spacing for large-format lithium-ion batteries under failure conditions

NASA L'SPACE Academy NPWEE Jun 2022 – Aug 2022
Project Manager & Science Team Lead

- Managed 2-months projects with 12 members to deliver a professional and technical 7-pages concept proposal for research and development of a Telescoping Thrust Arm that increases ISS's stability and enforce space travel
- Collaborated with Business Administration Team and the executive board to create the Team & Mission Gantt Charts and Technology Merit & Workplan that effectively plan and control resources, costs, profitability, and risks

Scarlet Spacehawks Oct 2021 – Present
Chief Financial Officer & Former System Engineer

- Conducted technical reviews to ensure system requirements were well-defined and followed the design criteria, along with verifying the preliminary designs, interfaces and prototype was operational and met the system requirements
- Compiled Project Management Plan & System Engineering Paper to develop and imply quality, budget and operation management that increase performance efficiency by 100% and reduce cost by 50%, saving over $5,000

Illinois Tech Rocketry – A SEDS Chapter Sept 2021 – Present
Propulsion & Launch Operation Lead

- Developed and tested solid propulsion system for 33,000ft dual-stage rocket with home-built composite propellant and carbon fiber motor case made from custom filament winder running on JavaScript that withstood over 1000 PSI
- Designed and constructed a vertical motor test stand on SolidWorks with custom, wireless PCB for DAQ and ignition system with software application for remote data collection on Python and C++ with testing capacity of 100kN

PROJECTS

AIAA Design Build Flight (Innovation Day Competition Award) Aug 2021 – Present
American Institute of Aeronautics and Astronautics

- Built and troubleshot the electrical system using eCalc for an unmanned, radio-controlled aircraft that deliver 10 environmentally sensitive vaccine vial packages using Flight Controllers and Radio Receivers & RC transmitter