HUBERT KIM

MECHATRONICS ENGINEER

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Home: Albany, NY

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TECHNICAL SKILLS

Hardwares, Electronics
- PLC
- ARM Processor

Data Analysis
- MATLAB
- Python

Robot Programming
- RAPID - RobotStudio
- RobotDK

Camera/Image Processing
- OpenCV

EDUCATION

PhD,
Mechanical Engineering
Virginia Tech, *Blacksburg, VA*
Earned in Dec 2021

: *ICTAS Doctoral Scholarship*

BS, *cum laude,*
Mechanical Engineering
NYU Tandon, *Brooklyn, NY*
Earned in May 2015

: *Best Mechanical Engineering Experience Award* for Undergraduate
April 2015

SUMMARY

A mechatronics research engineer developing methods for 1) increasing precision for automation recipe and 2) analyzing sub-component for early product development.

PROFESSIONAL EXPERIENCE

SYSTEM ENGINEER Aug 2022 – Current
Mechanical Components and Systems Lab | **GE Aerospace Research Center**

PRODUCT LINE AUTOMATION
- Designed and built a multi-robot cell using custom end-effector
- Calibrated multi-robot task with cameras to enhance the factory precision (+/- 10 mil)
- Designed miniaturized end-effectors for compliant material handling

INSPECTION SERVICE TOOL FOR A LIMITED SPACE
- Prototyped various robot design to solve the accessibility problem and structural rigidity requirement
- Experimentally quantified the parameters from the physical contact during various deployment system
- Realized camera-IMU synchronization system for compensating tool's inherent vibration

GRADUATE RESEARCH ASSISTANT May 2015 – Dec 2021
Assistive Robotics Laboratory | **Virginia Tech**

WEARABLE ROBOT FOR MOTION TRAINING
- Proposed a new approach to analyze how wearable robots drive the wearers' arms, leading to publications in *Scientific Reports* and *IEEE Access*
- Developed a lightweight (500 g), cheap ($ 509), and low-profile exoskeleton as exhibited in *HardwareX*

UNDERGRADUATE RESEARCH ASSISTANT May 2013 – Dec 2015
Dynamic System Laboratory | **NYU**

MODELING SMART MATERIALS
- Conducted impedance matching with inductor and resistors, to improve the power delivery by more than 60 % , as described in *Smart Materials and Structures*
- Carried out signal processing (system identification and impedance analysis) to find the surface resistance's effect, as represented in *J. of Intell Mater Syst Struct*