Hyunwoo Kwon

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EDUCATION

Bachelor of Science in Mechanical Engineering

Minor in Computer Science • University of Illinois at Urbana-Champaign • Urbana, IL • 08/2019 – Present • Junior • 3.84

Took a two-year break from 2020-2022 to fulfill national military service obligations.

EXPERIENCE

Research Assistant

Mind in Vitro Summer Research Program June 2023 – Sep 2023, Urbana, Illinois

* Collaborated with postdoctoral students and professor to automate laboratory tasks, enhancing efficiency and minimizing risk.
* Developed a robotic arm system using ROS and camera modules that accurately sensed lids on MEA plates.
* Implemented an automated media refreshment system via Raspberry Pi with flow rates between 1-15ml/min.
* Presented automation progress to NSF reviewers, showcasing communication and leadership skills.

Systems Admin

Beckman Institute February 2023- May 2023, Urbana, Illinois

* Developed user-friendly automation tools using Python, enabling individuals with limited programming knowledge to efficiently create web pages. This initiative significantly boosted productivity and streamlined operations.
* Enhanced the research environment by spearheading the installation of new UPS systems and assembling computers tailored for graduate researchers. This proactive approach directly led to heightened equipment availability and research continuity.
* Fostered inter-departmental collaboration by partnering with various research groups, refining inventory management processes. This effort ensured accurate tracking of all items, both incoming and outgoing, maintaining a meticulous inventory of over 100 essential items.

Research Consultant

Looxent Inc. April 2022 - July 2022, Seoul, South Korea

* Enhanced supplier relations and reduced Hanssem Corporation's costs by 7% through effective negotiations and inventory management optimization.
* Achieved 40% cost savings by partnering with Chinese manufacturers, resulting in an annual savings of $60,000.
* Bolstered international collaboration, securing four new supplier contracts for 2023 and reducing company spending by 10%.
* Crafted multilingual RFPs for diverse products, leading to a 20% increase in supplier responses.

INVOLVEMENT

**Undergraduate Researcher**

**Wave Propagation and Metamaterials Laboratory December 2022 – Present, Urbana, Illinois**

* Utilized MATLAB app designer for software development, programming controls for linear motion stages. This enabled accurate positioning of magneto-active elastomer samples, underscoring proficiency in software development and application.
* Innovated engineering solutions by designing a new setup with piezoelectric actuators and developed an algorithm for zero-force positioning, achieving a reduction in setup time by over 5 minutes per sample, highlighting both technical and problem-solving capabilities.
* Conducted comprehensive materials testing, performing error analysis on 96 elastomer samples to assess the influence of magnetic fields on Young's modulus, showcasing depth in materials science and analytical skills.
* Demonstrated expertise in CAD modeling, designing models for elastomer sample setups connected to force sensors, and optimizing eigenfrequencies through simulation analysis, emphasizing proficiency in design and simulation.

CERTIFICATIONS & AWARDS

HSK 6 (Chinese Proficiency Test)

Chinese Testing International Co., LTD • 2019

Illinois Design Challenge 2023

1st place in Chart Industries Sponsored Challenge and Open Challenge

SKILLS

Software: AutoCAD, Fusion360, CREO, C++, MATLAB, COMSOL Physics, Java, Python, Solidworks, ROS

Language: Korean, Chinese