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| **HYUNWOO LEE** | | | | | |
| **Phone** (+65) 8575 2728 | **LinkedIn** | | | | |
| **E-mail** hyunwoo001@e.ntu.edu.sg | https://www.linkedin.com/in/hyunwoolee0329 | | | | |
| **Nationality** South Korean |  | | | | |
| Hyunwoo Lee, a focused and determined mechanical engineering student graduating in 2025 with a strong interest in biomedical engineering, particularly in biorobotics. Eager to tackle practical problems to make a difference and enhance lives of anyone anywhere. Proven academic proficiency and research capability through strong academic standing and numerous research experiences. | | | | | |
| **Research Interests** | | | | | |
| * Prosthesis (Neuroprosthesis) * Artificial Organs * Exoskeletons * Implantable Devices * Rehabilitation Devices | | | | | |
| **Education** | | | | | |
| **Bachelor of Engineering in Mechanical Engineering** | | **Aug 2020 – May 2025** | | | |
| Nanyang Technological University – Singapore | | | | | |
| * 4.84 / 5.00 CGPA - First Class Honor (Highest Distinction) * Robotics and Mechatronics Stream (Specialization) * Accelerated Bachelors Program (3.5 years candidature) * Major prescribed electives: MA4825 Robotics, MA4822 Measurements and sensing system, MA4830 Realtime software for mechatronics systems, MA4012 Machine Intelligence | | | | | |
| **Research Experience** | | | | | |
| **FYP Research Stuff** | | **Jun 2024 – May 2025** | | | |
| **Associate Professor Ang Wei Tech** | | | | | |
| Final Year Project, Nanyang Technological University | | | | | |
| * Details about FYP research * … | | | | | |
| **HeRo Lab Research Stuff** | | **Jun 2024 – Aug 2024** | | | |
| **Assistant Professor Han, Amy Kyungwon** | | | | | |
| Summer Lab Internship, Seoul National University | | | | | |
| * Details about HeRo lab research * … | | | | | |
| **Investigation of Novel Lattice Designs for 3D Printing** | | **Aug 2021 – May 2022** | | | |
| **Assistant Professor Lai Changquan** | | | | | |
| Undergraduate Research Experience on Campus (URECA), Nanyang Technological University | | | | | |
| * Investigated 3x3x3 symmetrical lattices composed of two different type of unit cells with no internal void to obtain lattice composition with optimal mechanical properties * Utilized finite element analysis and optimization to yield optimal thickness for each type of unit cell at specific relative densities | | | | | |
| **Publications & Presentations** | | | | | |
| **CQ Lai, F Jiang. (2023) Bioinspired Compound Nested Lattices with Programmable Isotropy and Elastic Stiffness Up to Theoretical Limit** | | | | | **Co-Author** |
| Submitted to Nature, Science and Advanced Materials | | | | | |
| **Work Experience** | | | | | |
| **Lab Intern** | | | **Jun 2024 – Aug 2024** | | |
| Healthcare Robotics (HeRo) Lab, Seoul National University, Seoul, South Korea | | | | | |
| * Descriptions * …. | | | | | |
| **Mobile Robotics Intern** | | | | **Jan 2024 – May 2024** | |
| Delta Electronics Int'l (Singapore), Singapore | | | | | |
| * Developed Autonomous Mobile Robot (AMR) solution for elderly care and medical supply and necessities delivery * Designed the safety sensor systems and programmable logic controller (PLC) for AMR in accordance with international standards * Utilized lidar and camera to implement Visual Simultaneous Localization And Mapping (VSLAM) used in AMR operation * Trained computer vision model for navigation, obstacle detection and elevator panel recognition | | | | | |
| **Sergeant, Radar Operator** | | | **Jun 2022 – Dec 2024** | | |
| Capital Defense Command, Republic of Korea Army, Seoul, South Korea | | | | | |
| * Operated low altitude radar and thermal observation device in numerous air defense bases * Served as a Squad Leader (June 2022 - December 2022) | | | | | |

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| **Leadership Experience** | | | | | |
| **Heal Heels** | | | **Aug 2021 – Dec 2021** | | |
| **Convertible heels that can transform into flat shoe** | | | | | |
| Product Development Challenge, Dyson-NTU Studio | | | | | |
| * Piloted the team of 5 from generation of idea to development of product and delivered a final product presentation * Demonstrated meticulous planning, decisiveness, and leadership * Motivated the team to maintain focus and push through challenges | | | | | |
| **Cargot** | | | **Jan 2022 – May 2022** | | |
| **Lightweight, durable, and convenient safe for online deliveries** | | | | | |
| Engineering Innovation & Design, NTU | | | | | |
| * Led a team of 9 to develop a product idea with market potential into an initial prototype and compile a business proposal to outline market feasibility * Identified strength of team members and distributed responsibilities accordingly to allow everyone to fully unleash their potentials * Established an active communication between the team and the supervisor to ensure appropriate progression | | | | | |
| **Contactless Mart Delivery Solution** | | | **Jan 2022 – May 2022** | | |
| **Autonomous solution for shopping without entering the mart** | | | | | |
| Mechatronics System Design, NTU | | | | | |
| * Directed a team of 4 to develop mechatronics solution to tackle problems amidst pandemic * Displayed cooperation and effective communication to collaborate on complex software and hardware development * Coordinated development workflow to establish consistency and enhance productivity | | | | | |
| **Awards and Honors** | | | | | |
| **AY 21/22 Dean’s List** | | **2022** | | | |
| Nanyang Technological University | | | | | |
| **Skills** | | | | | |
| * C++ * Python * JavaScript * ROS * CAD | * GitHub * Docker * Microsoft Office * Finite Element Analysis | * VSLAM * Machine Learning * Research and Analysis * Data Collection | | * Korean (native) * English (native) | |
| **References** | | | | | |
| **Assistant Professor Lai Changquan** | | | | | **cqlai@ntu.edu.sg** |
| **Undergraduate Research Experience on Campus (URECA) Supervisor** | | | | | |
| School of Mechanical and Aerospace Engineering and School of Materials Science and Engineering, Nanyang Technological University | | | | | |
| **Assistant Professor Han, Amy Kyungwon** | | | | | **amyhan@snu.ac.kr** |
| **Healthcare Robotics (HeRo) Lab Internship Supervisor** | | | | | |
| Department of Mechanical Engineering, Seoul National University | | | | | |
| **Associate Professor Ang Wei Tech** | | | | | **wtang@ntu.edu.sg** |
| **Final Year Project Supervisor** | | | | | |
| School of Mechanical & Aerospace Engineering, Nanyang Technological University | | | | | |