Taylor Song (Ju Hyun)

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EDUCATION

Stanford University Graduate School of Engineering, Stanford, CA – GPA 3.91 **Sep 2019 – Jun 2021**
Master of Science, Mechanical Engineering

Cornell University, College of Engineering, Ithaca, NY **Aug 2014 – Dec 2017**
Bachelor of Science, Mechanical and Aerospace Engineering

WORK EXPERIENCE

Tesla Motors **Jun 2020 – Sep 2020**
Intern Mechanical Design Engineer*, Energy Products Group*

- Designed and prototyped new battery runaway mitigation mechanism and executed DOE to validate to certify for UL9540a
- Performed lab setup and testing of the prototypes using LabView, gas analyzer, thermocouple and pressure sensor circuits to collect critical datapoints for future thermal and pressure modeling and failure analysis
- Honed skills in Design for Manufacturability by quoting and delivering manufacturing drawings and assembly instructions of the design to international suppliers, technicians, and in-house shops for on-time delivery
- Collaborated and communicated across neighboring engineering teams to design for developing battery specifications

Samsung Electronics **Jan 2018 – May 2019**
Professional (Associate Product Manager), *IoT Product Planning Group*

- Developed mechanical design specifications, wrote Product requirement document (PRD), and worked closely with international suppliers (OEM) and retailers to launch consumer products
- Successfully drove overall schedule to pass different reliability tests and UL qualifications to deliver the product on time
- Identified product positioning strategy in smart home market and mid- to long-term roadmap through analysis of customer data and user studies. Used results to determine 5 core features with significant projected CAGR
- Developed currently used cloud plan by developing IoT service monetization strategy reflecting server price, customer support plans, and resource plans

ASML **Aug 2016 – Dec 2016, May 2017 – Aug 2017**
Intern/Co-op Mechanical Design Engineer, *MDev Optical Modules Group*

- Designed with FEA analysis and tested a new fixture to optimize the geometry and positioning of glass optics inside EUV system to tackle over-constraints during bonding
- Developed and executed new test methods in clean room to analyze source of optics drift due to humidity and temperature
- Developed Matlab GUI that process high volume of client's optics drift failure data for failure analysis and visualization
- Wrote Matlab script to detect edges of epoxy flow for optimization of liquid flow geometry when bonding optics to metal

PROJECT EXPERIENCE

ME 218A/B – Smart Product Design Fundamentals, *Stanford University* **Sep 2019 – Mar 2020**

- Series of mechatronics projects at Stanford University. Built an arcade game that interacts with players by analog sensing and non-contact sensing and return feedback with audio and motion. Built a battle bot that polls signal and makes decision based on IR, color, and contact sensors, and carries out tasks with DC motors and encoders to compete and gain score
- Worked on digital circuit design and event-driven programming in C, featuring embedded software, register level programming, input/output ports and user I/O, software design. Gained experience with microcontroller hardware subsystems: timer systems, PWM, interrupts, analog circuits, and interfacing sensors
- Designed and prototyped mechanical assembly parts through Solidworks, 3D printing, machining, and laser cutting

Stanford CHARM Haptics Lab Research Assistant, *Stanford University* **Jan 2020 – Mar 2020**

- Designed sensor-to-actuator mapping system for social touch data to be relayed on as haptic signals on human arm
- Enhanced actuator network for optimal thermal distribution, optimized signal process code to decrease total runtime 49.6%

SKILLS

Skills: SolidWorks, NX Unigraphics, Catia, GD&T, ANSYS, Fusion 360, Python, Matlab, C, JAVA, R, Machining, Prototyping