

# Hyung-gun Chi

MASTER STUDENT

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## Education

### Purdue University

MASTER OF SCIENCE IN MECHANICAL ENGINEERING

West Lafayette, IN, USA

Aug. 2018 - PRESENT

### Yonsei University

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Seoul, South Korea

Mar. 2010 - Feb. 2017

## Skills

- Programming** Python, C/C++, JavaScript, HTML, CSS, PHP, Matlab, SQL
- Frameworks** ROS, TensorFlow, Keras, Caffe
- Software** Creo Parametric, SolidWorks, AutoCAD, HyperWorks

## Publications

### Journal Papers

- S. Kim, N. Winovich, **H. G. Chi**, G. Lin and Karthik Ramani. "Latent Transformations Neural Network for Object View Synthesis" (2019) *International Journal of Computer Graphics*, submitted.
- L.Paredes, X. Qian, **H. G. Chi** and Karthik Ramani. "ControllAR: Design and Fabrication of a Universal Parametric Low-Profile Hand Wearable for Augmented Reality Interactions" (2019) *Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, under revision.
- H. T. Hwang, **H. G. Chi**, N. K. Kang, H. B. Kong and Soo-Hong Lee. "An Evaluation Methodology for 3D Deep Neural Network using Visualization in 3D Data Classification" (2018) *Journal of Mechanical Science and Technology (JMST)*, accepted.

### Conferences Papers

- S. Kim, **H. G. Chi** and Karthik Ramani. "FuseNet:Fusing surface and volumetric representations for 3D Shape Synthesis and Analysis" (2019) *International Conference on Computer Vision (ICCV)*, submitted.

## Working Experience

### NEIL LAB Corporation

CO-FOUNDER & PYTHON DEVELOPER

Seoul, South Korea

Sep. 2016 - Aug. 2017

- Founded the start-up company with more than 20 employees and led and managed the company as a CEO
- Developed automation program using Python for an office platform for a tax office to enhance the office's work efficiency and customer service

## Research Experience

### Engineering Shape Benchmark (ESB)

GRADUATE ASSISTANT, C-DESIGN LAB

West Lafayette, IN

Jan. 2019 - Present

- Collected Engineering shape with web-scraper and expanded the data using Creo Parametric API to build a database, and analyzed volumetric and surface information for 3D shape learning.

### Latent Transformation Neural Network (LTNN)

GRADUATE ASSISTANT, C-DESIGN LAB

West Lafayette, IN

Aug. 2018 - Feb. 2019

- Developed a fully-convolutional conditional generative model which is capable of view synthesis using a light-weight neural network suited for real-time applications.

### Interventional Generative Network (IGN)

GRADUATE ASSISTANT, C-DESIGN LAB

West Lafayette, IN

Aug. 2018 - Present

- Developed the GAN model which generate 3D objects given a discrete category condition and continuous instance-level attributes.

### Visual Programming Language for Mobile Robots and IoT Nodes (VIPO)

GRADUATE ASSISTANT, C-DESIGN LAB

West Lafayette, IN

Aug. 2018 - Present

- Proposed a web-based visual and spatial programming language that allows novice users and small industries to program mobile robots and IoT Nodes to execute planned tasks

### ControllAR

GRADUATE ASSISTANT, C-DESIGN LAB

West Lafayette, IN

Aug. 2018 - Dec. 2018

- Proposed a parametrizing interface, simple and accessible fabrication workflow with no soldering or sewing involved, and a pressure sensor using a soft piezoresistive elastomer material.

### 3D Object Classification Model Evaluation

RESEARCH ASSISTANT, KNOWLEDGE-BASED DESIGN LAB

Seoul, South Korea

Feb. 2016 - Jul. 2017

- Proposed a method which evaluates 3D neural network models using the visualization based on the decomposition of a model's predictions to apply the models in the field of mechanical design and manufacturing.