Yida

WANG

Technical University of Munich

Basic Background

Shenyang No.2 Senior High

Fundamental Sciences

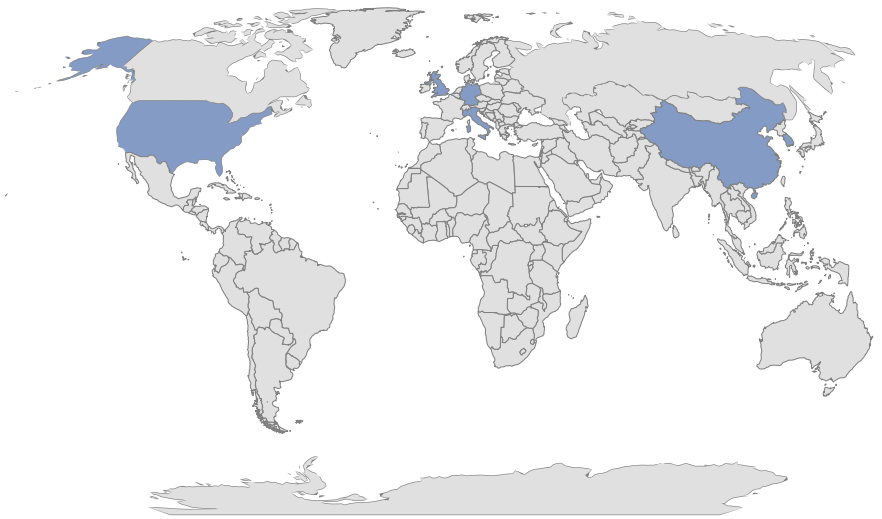
Beijing University of Posts and Telecommunication

- Telecommunication Engineering
- Computer Engineering

Technical University of Munich

- Computer Vision
- Computer Graphics

Places in which I have been working



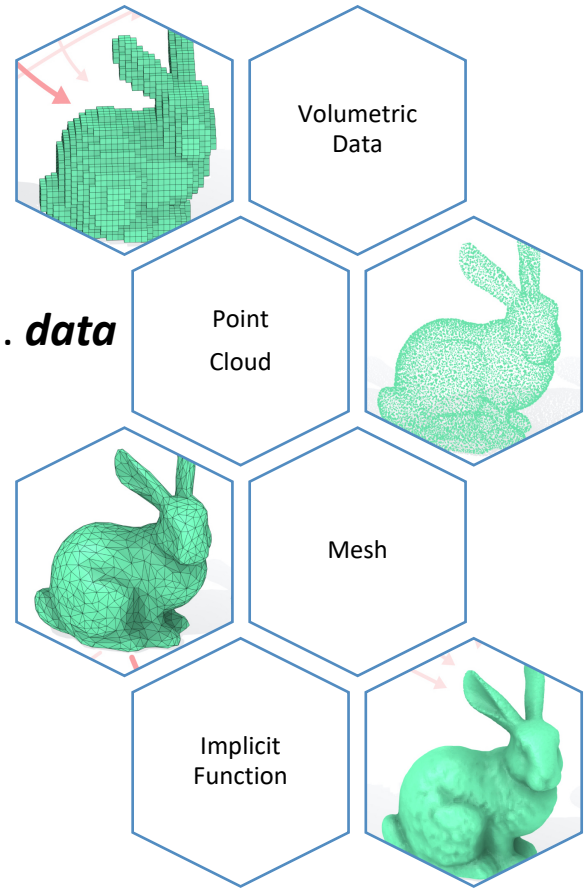
Overview

1. Academic Experience
2. Computer Science
3. Research Engineering
4. Teaching and Mentoring
5. Technical Collaborators
6. Fun Facts

How to constantly making
IMPACT?

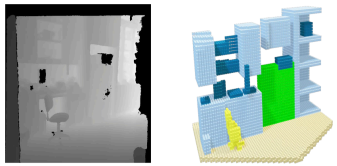
1. Academic Background – *in 3D Computer Vision*

(1). ***data***

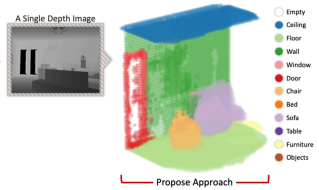


(2). ***Research***

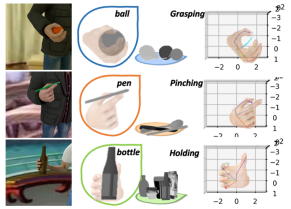
[1]. ICCV
- *Seoul, S Korea*
- *3D CV*



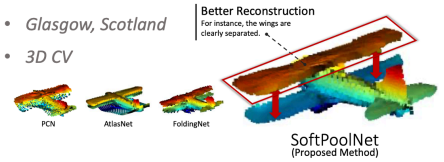
[2]. 3DV
- *Verona, Italy*
- *3D CV*



[3]. IROS
- *Macau, China*
- *Robotics*



[4]. ECCV
- *Glasgow, Scotland*
- *3D CV*



(3). ***Industry***

(1) Google Summer of Codes
- Serving as project developer in 2015 and 2016
- Serving as project mentor in 2019

(2) Microsoft Open Source Challenge
- Global 2nd prize in (5 winners in total)
- Invited talk in Microsft Faculty Summit 2016

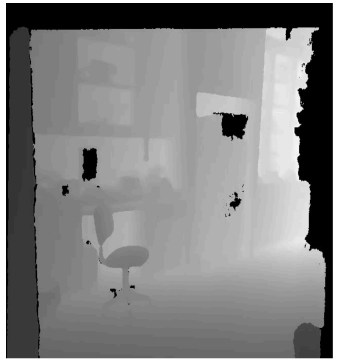
(3) Scilab Simulator Design Contest
- Global 1st prize in 2013
- AIS system simulation

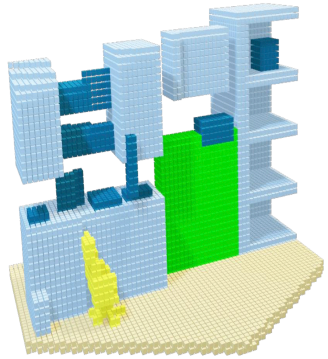
(4) FACEBOOK Research Intern
- Research intern in Facebook Reality Lab for eye 3D reconstruction

2. Computer Science – *selected works from conferences*

[1]. ICCV

- *Seoul, S Korea*
- *3D CV*





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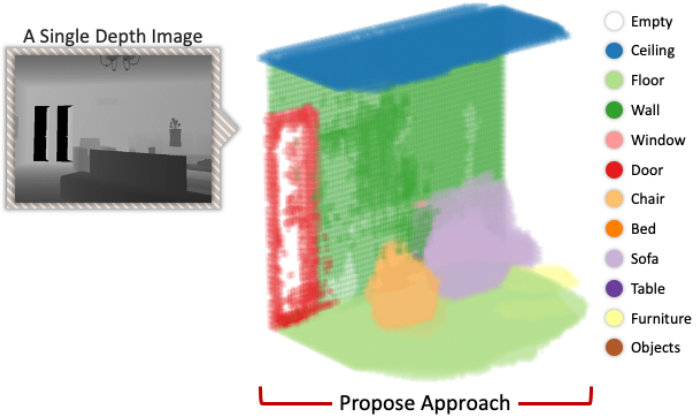

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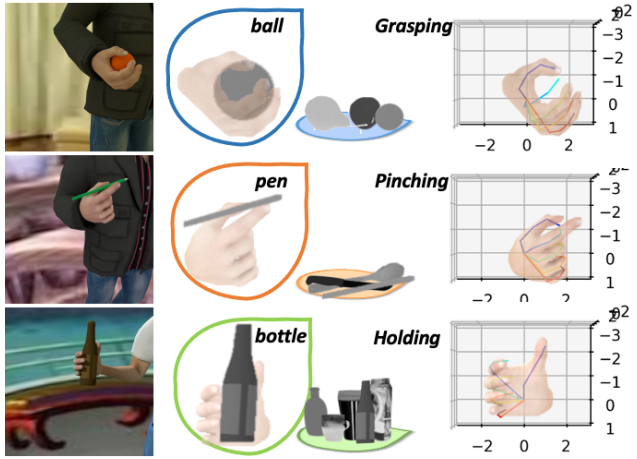

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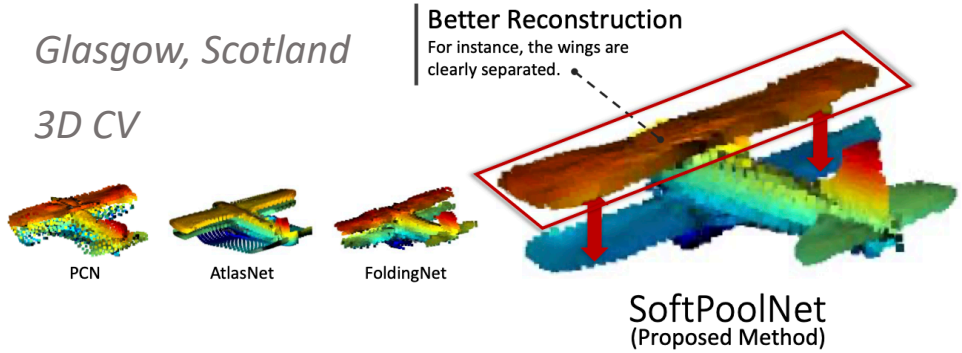
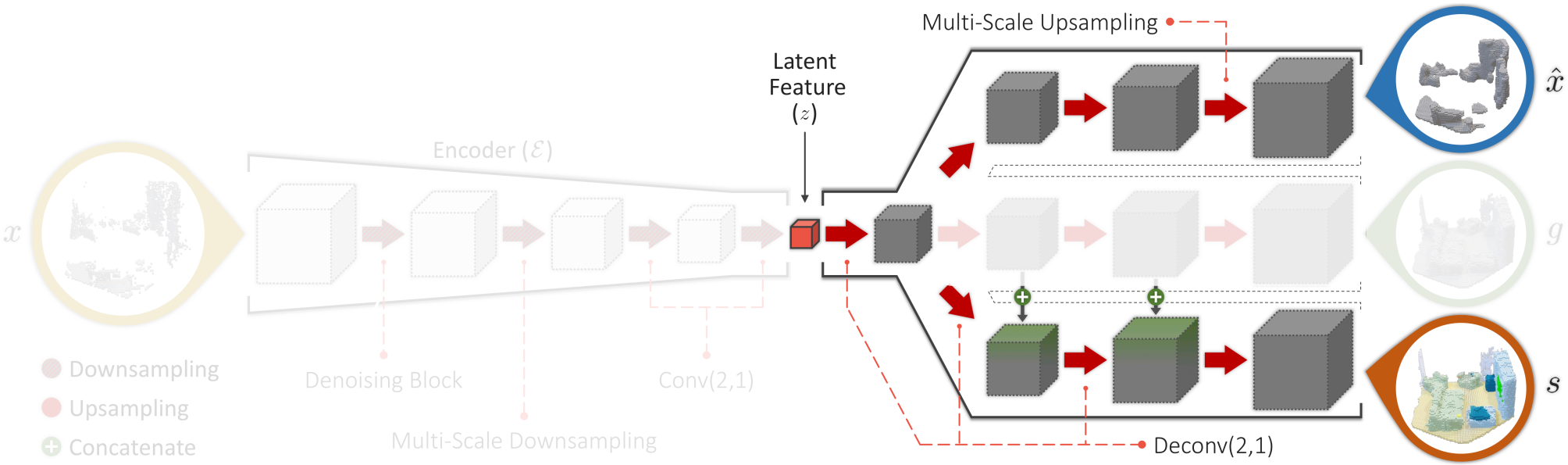
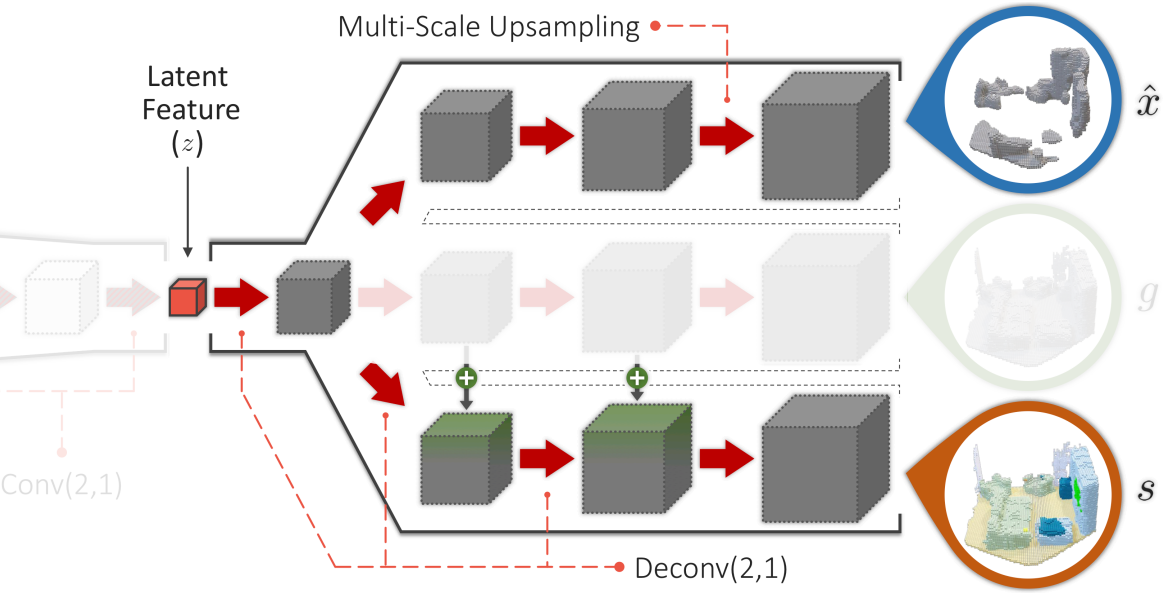


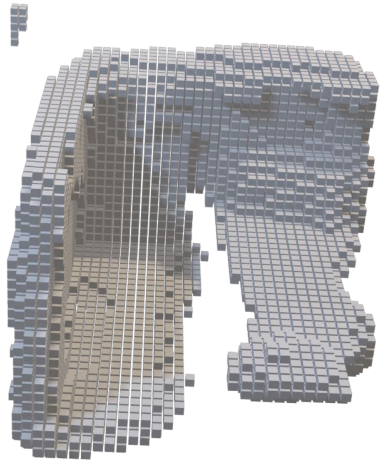
2. Computer Science – *selected works from conferences*



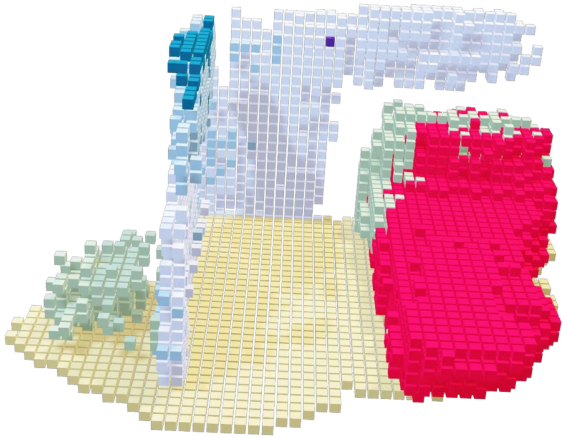
[1] ForkNet: Multi-branch Volumetric Semantic Completion from a Single Depth Image ICCV 2019

2. Computer Science – *selected works from conferences*





(a) SDF Volume



(b) Completed Semantic Scene

[1] ForkNet: Multi-branch Volumetric Semantic Completion from a Single Depth Image – ICCV 2019

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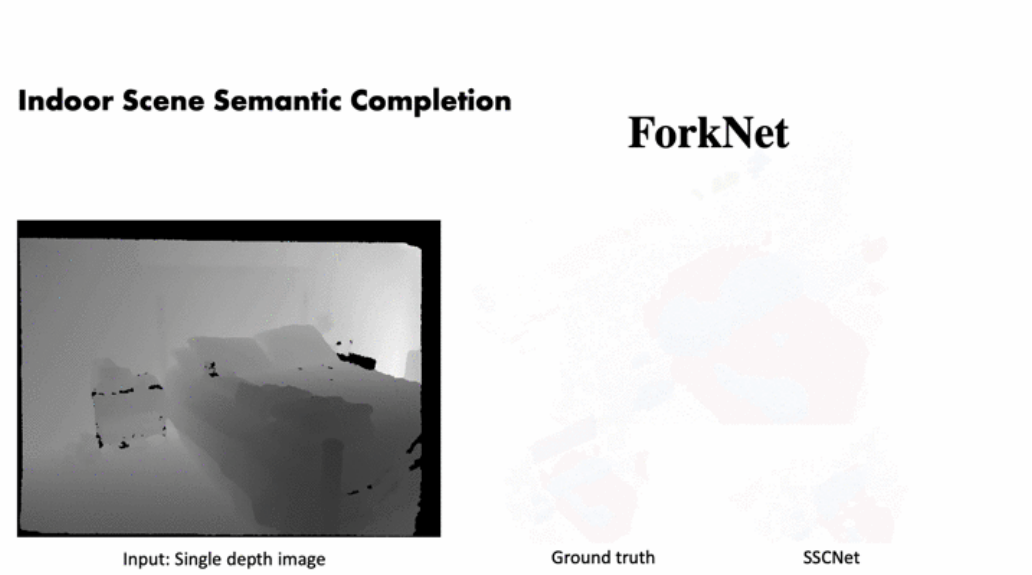

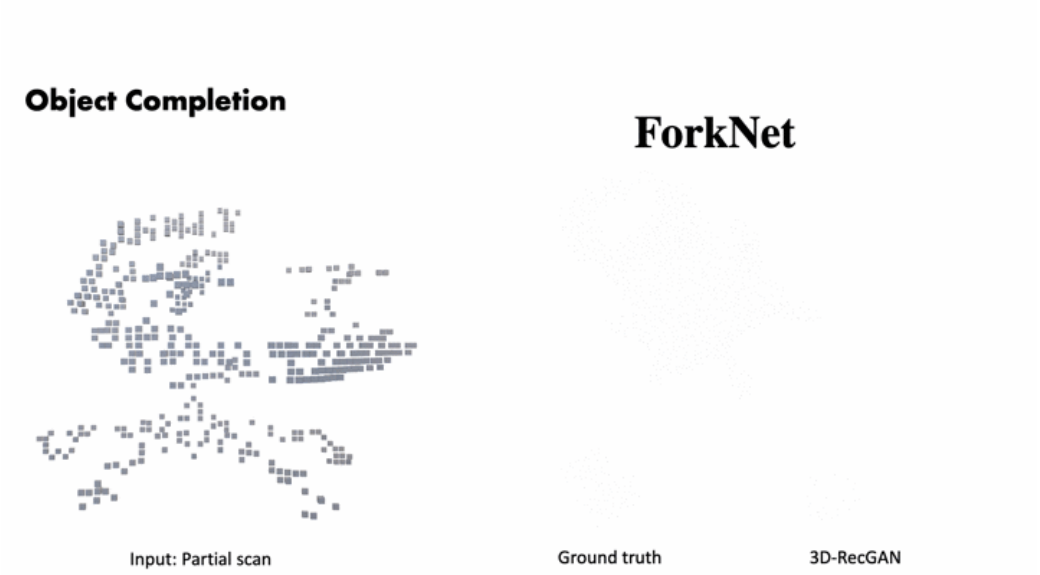

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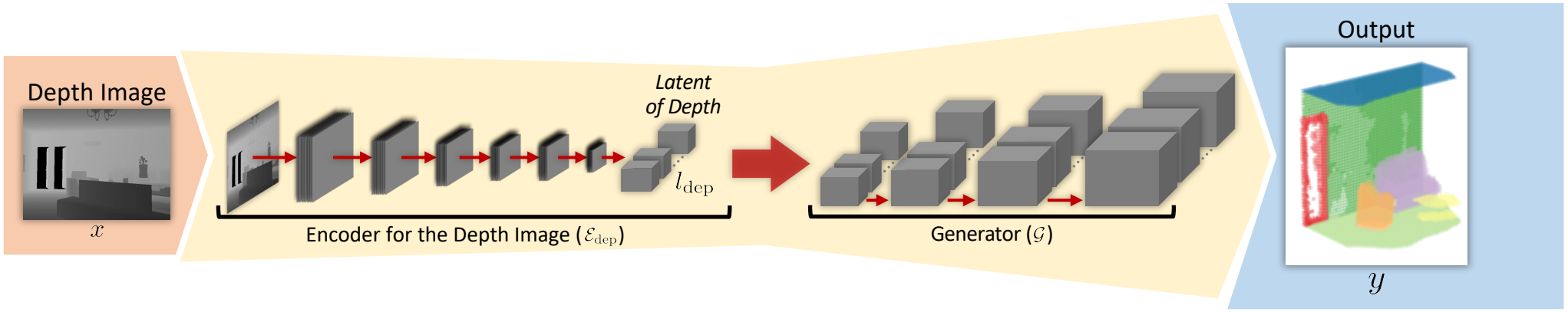
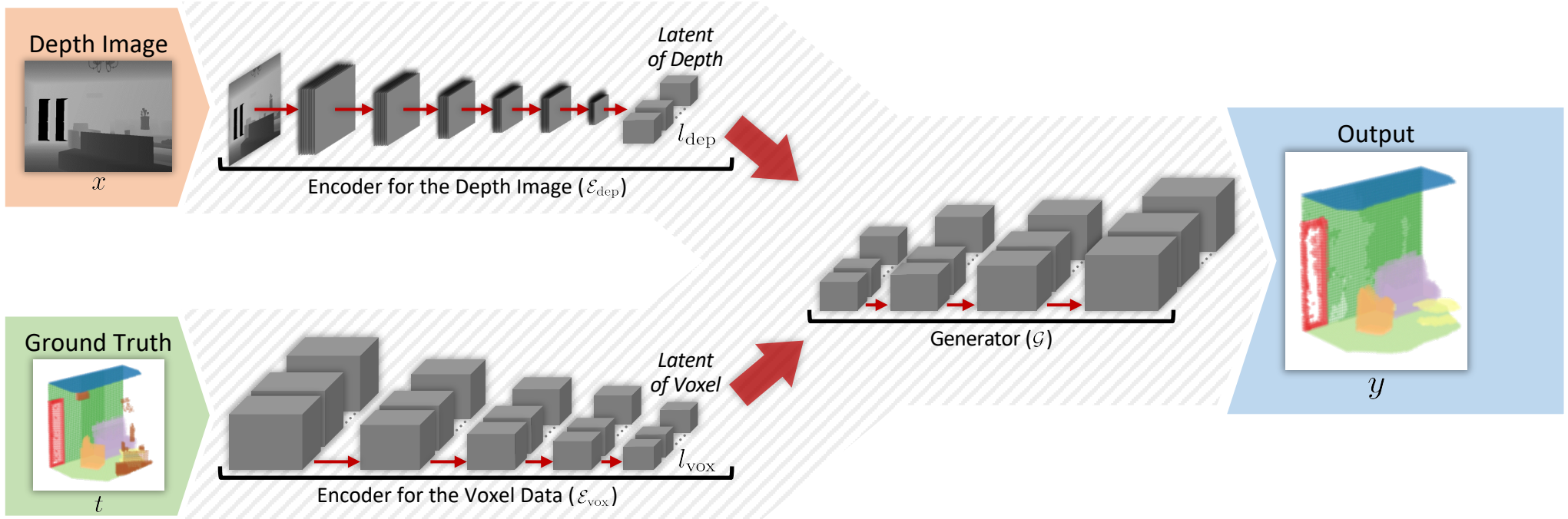


[2] Adversarial Semantic Scene Completion from a Single Depth Image

2. Computer Science – *selected works from conferences*



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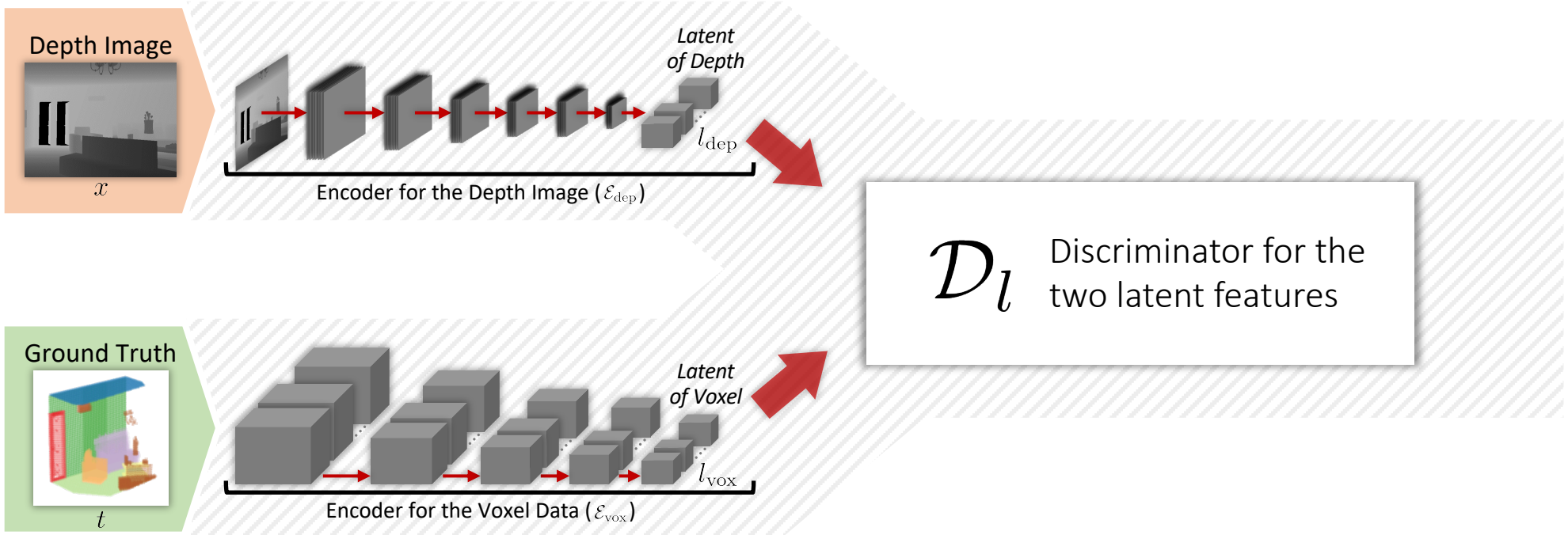

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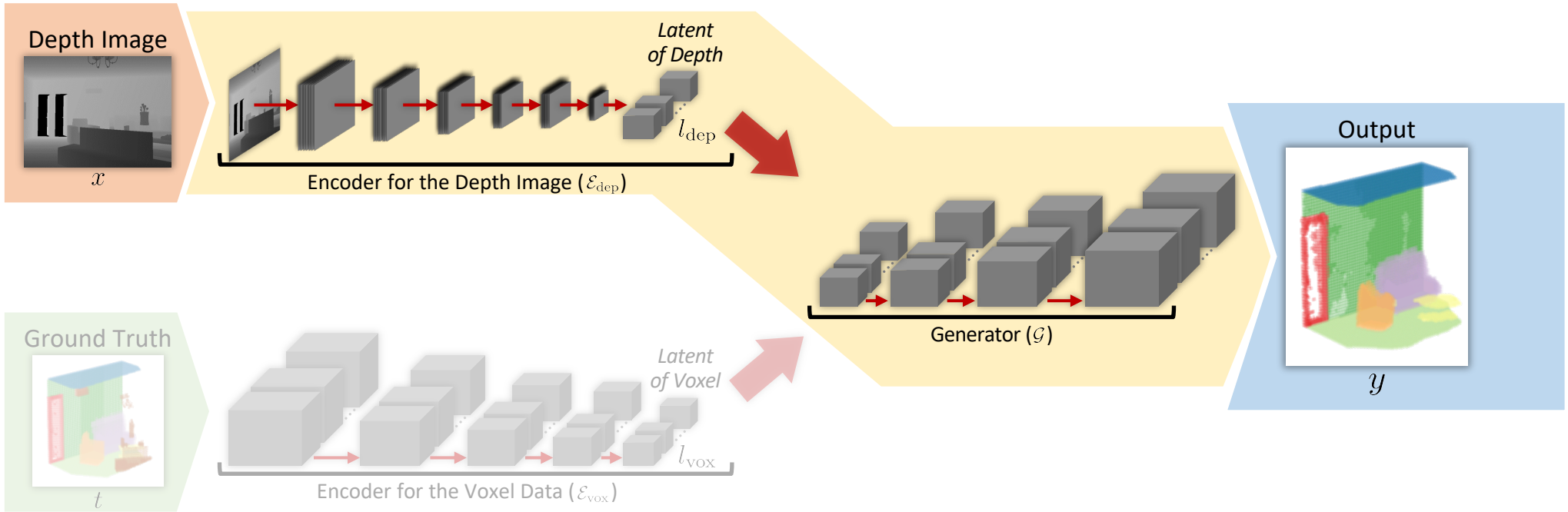


[2] Adversarial Semantic Scene Completion from a Single Depth Image

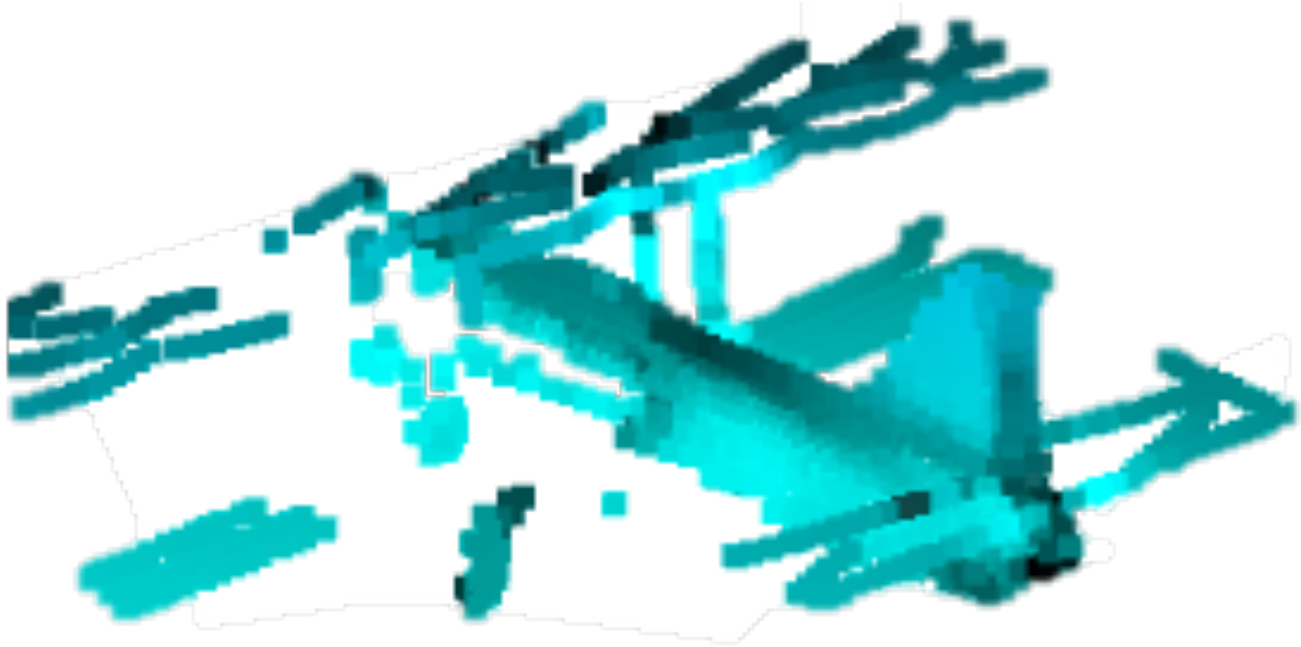
2. Computer Science – *selected works from conferences*

A Single Depth Image

[2] Adversarial Semantic Scene Completion from a Single Depth Image

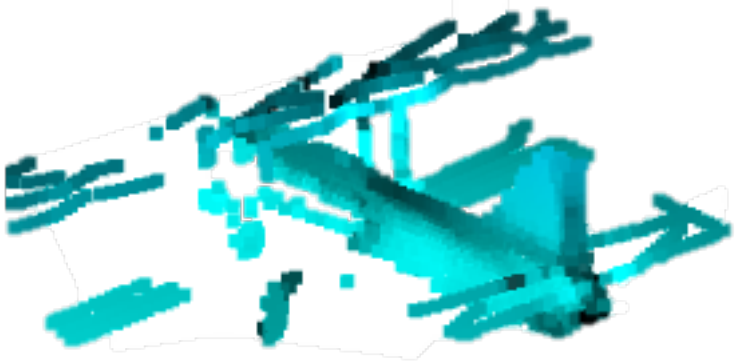
2. Computer Science *– selected works from conferences*

From the partial scan of the object

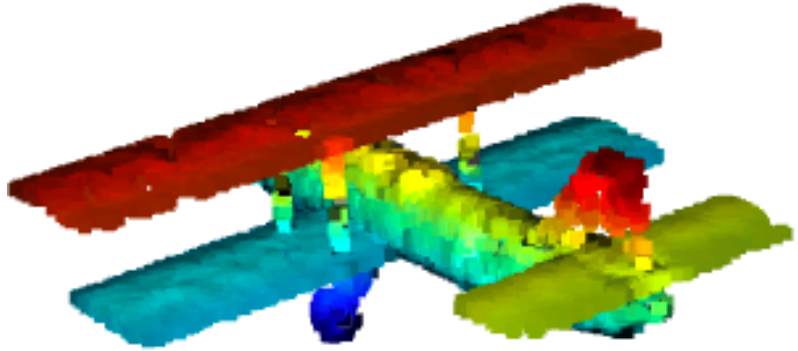


[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

2. Computer Science *– selected works from conferences*



From the partial scan of the object



Find its complete reconstruction.

[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

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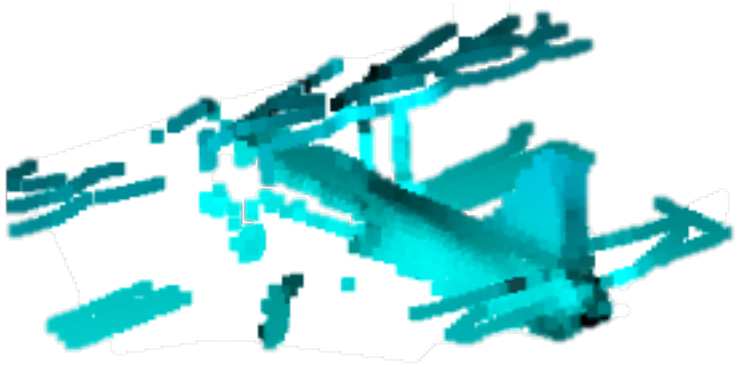
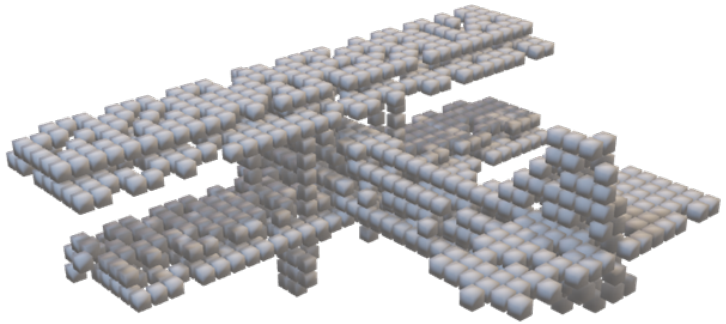
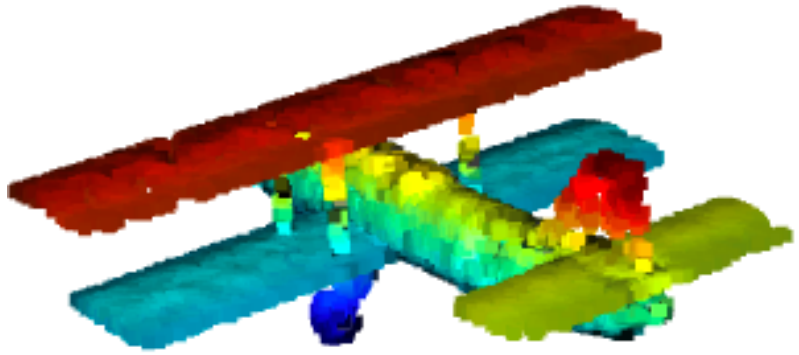


From the partial scan of the object



Voxel Reconstruction



Point Cloud Reconstruction

[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

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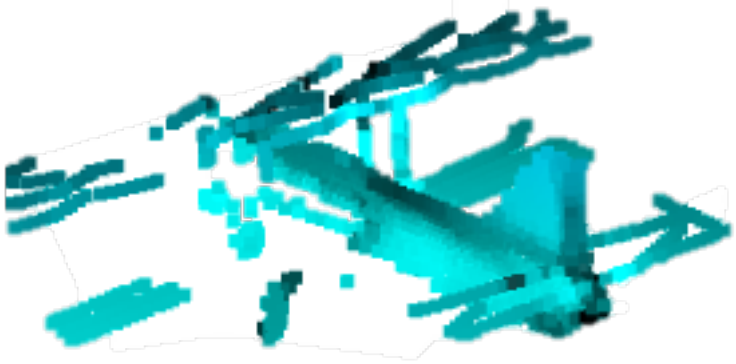
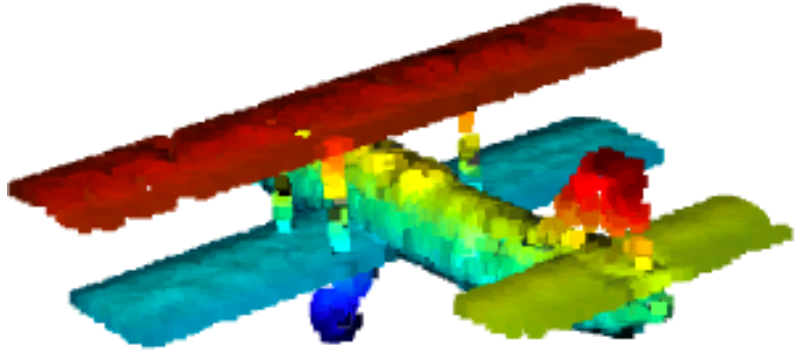


From the partial
scan of the object



Point Cloud
Reconstruction

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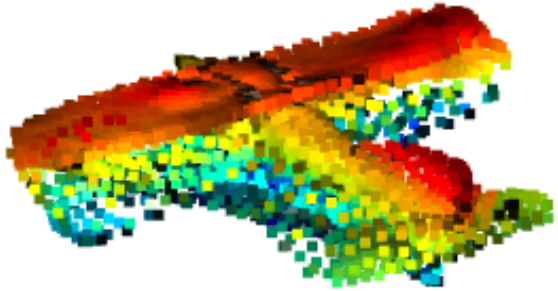
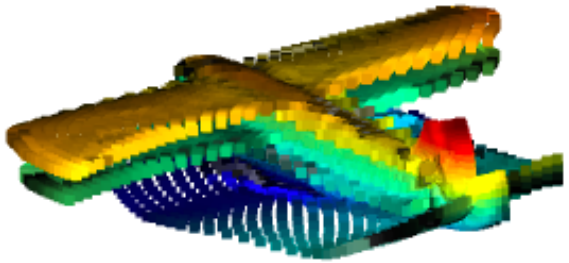
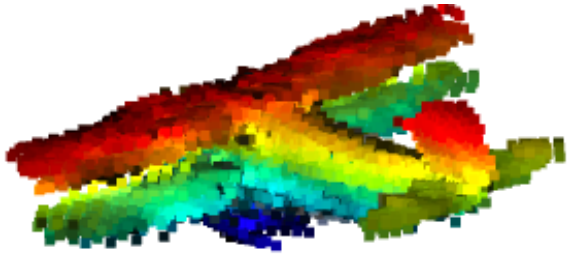


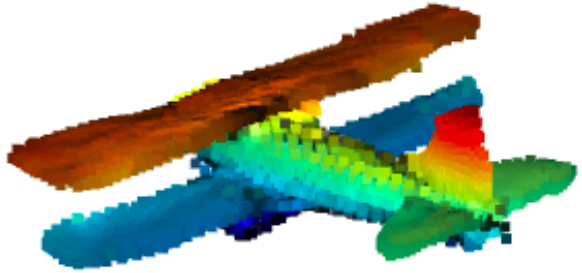
FoldingNet



AtlasNet



PCN



SoftPoolNet

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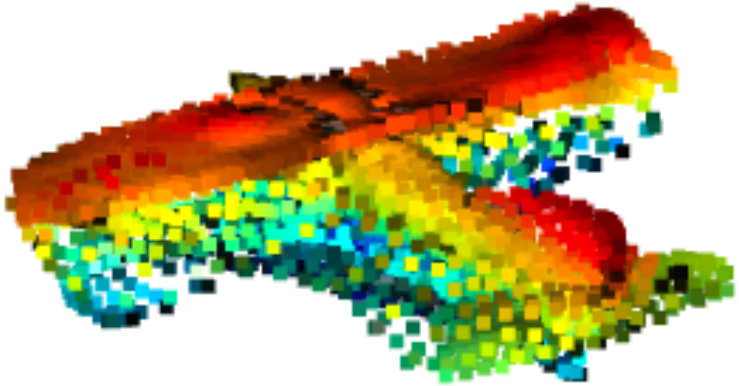
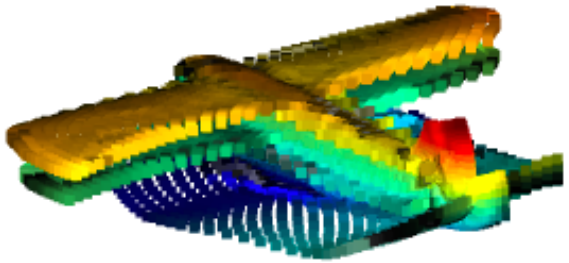
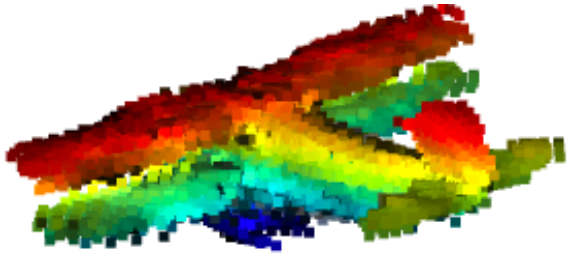


FoldingNet



AtlasNet



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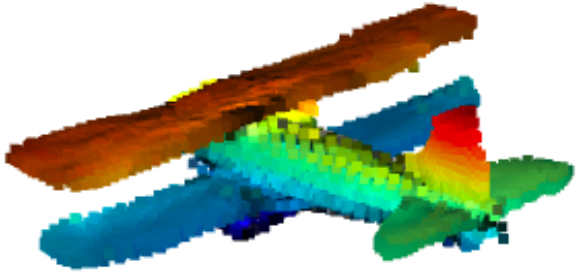

SoftPoolNet

[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

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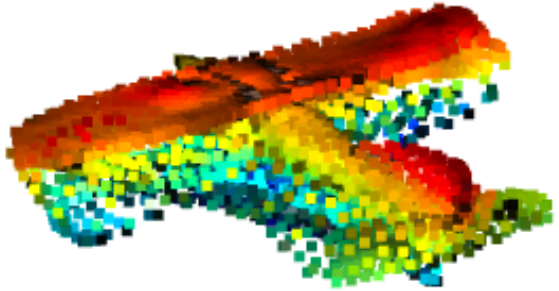

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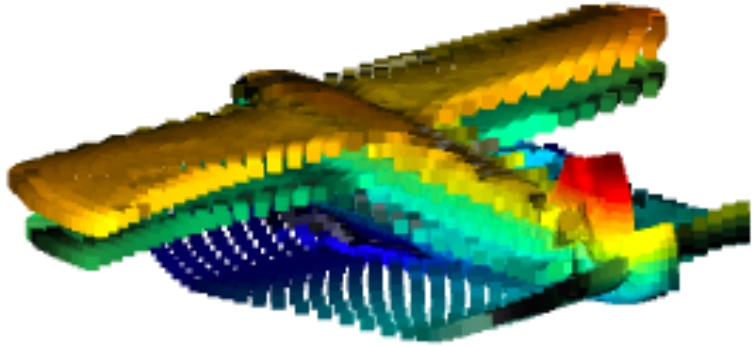

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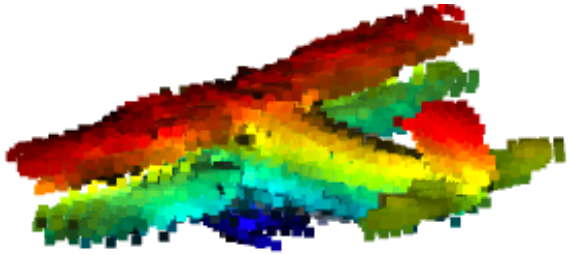
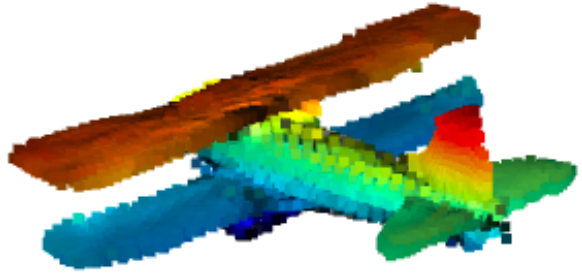


PCN



SoftPoolNet

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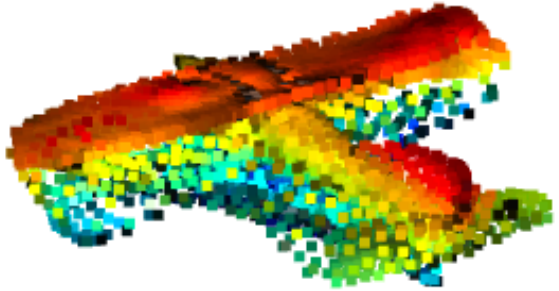

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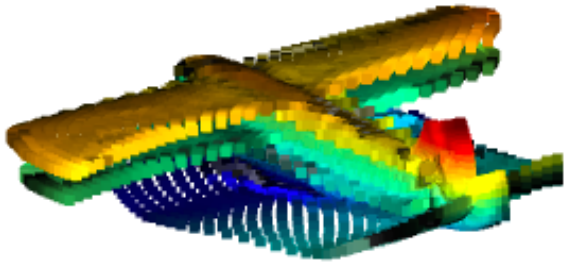

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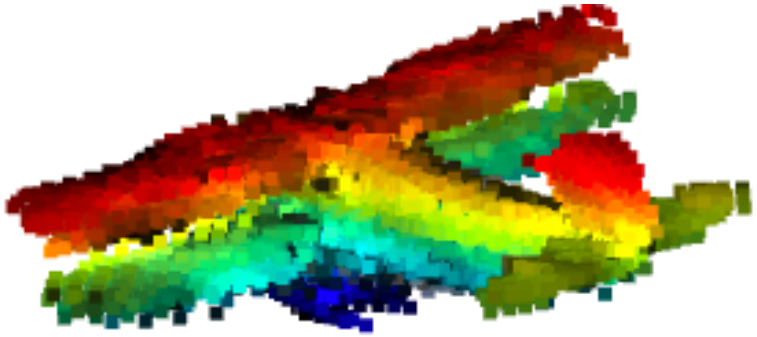

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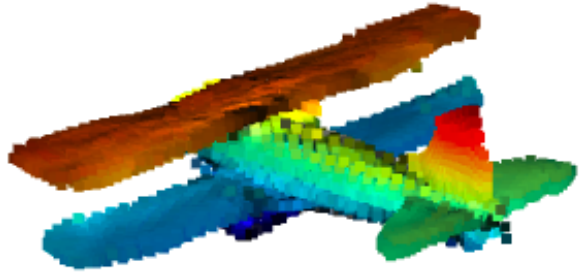

SoftPoolNet

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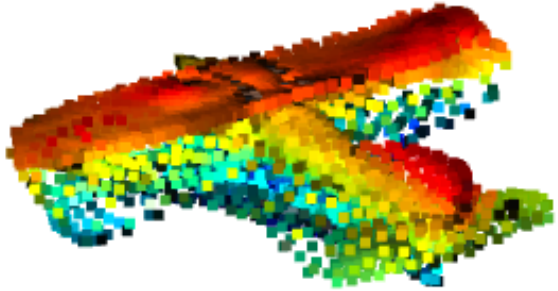
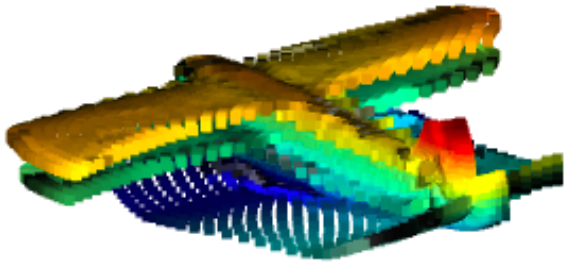


FoldingNet



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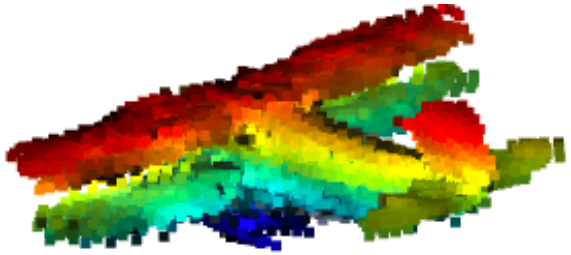
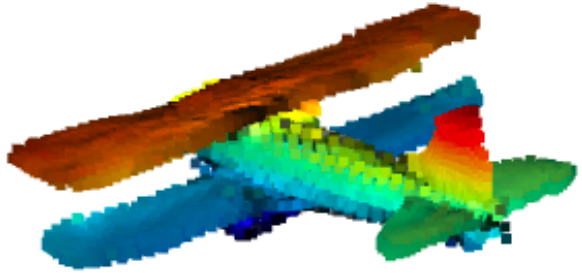


PCN



SoftPoolNet

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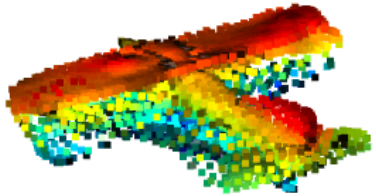
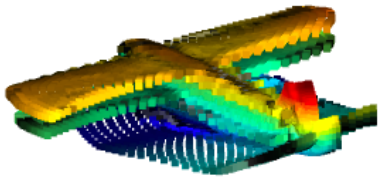
Better Reconstruction

For instance, the wings are clearly separated.



FoldingNet



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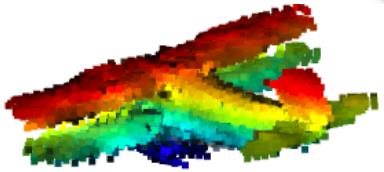
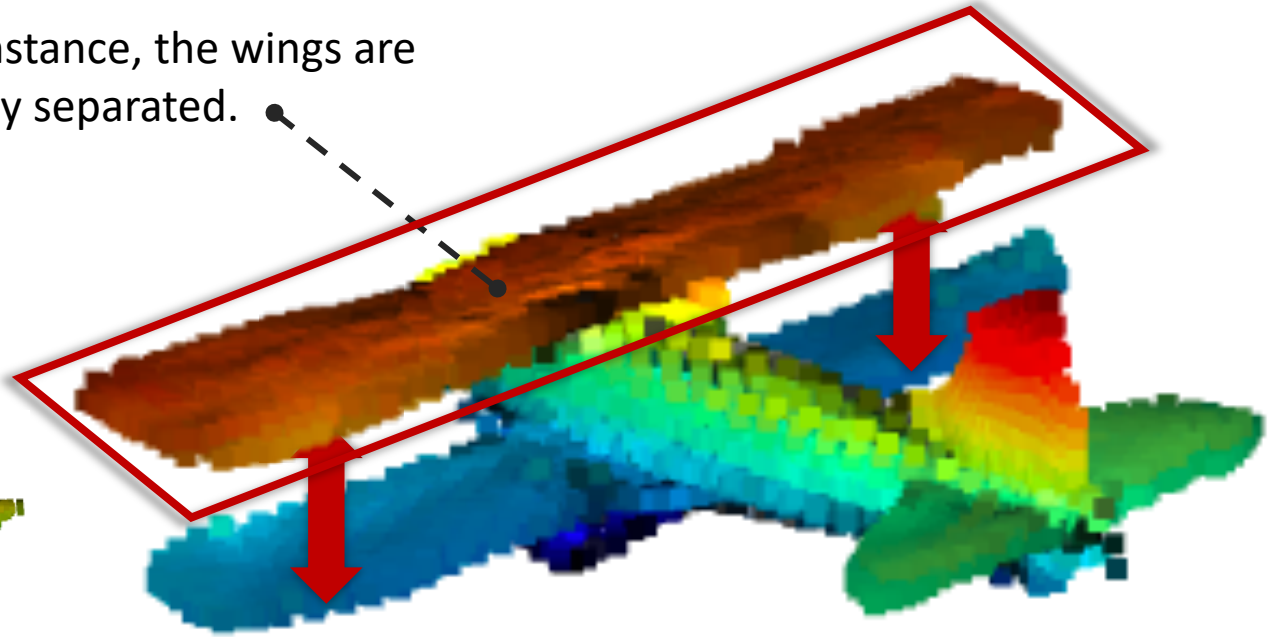


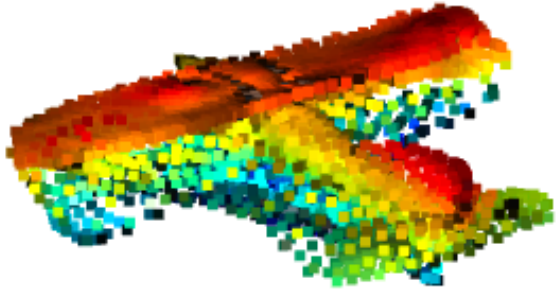
PCN



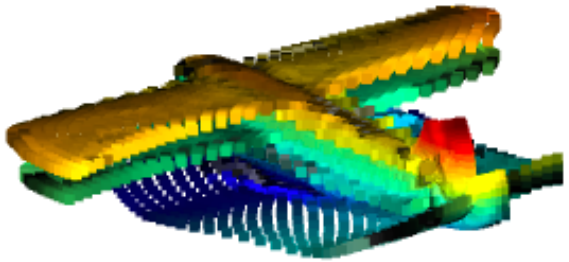
SoftPoolNet
(Proposed Method)

[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

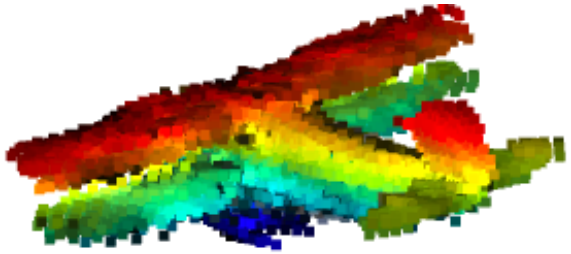
2. Computer Science – *selected works from conferences*



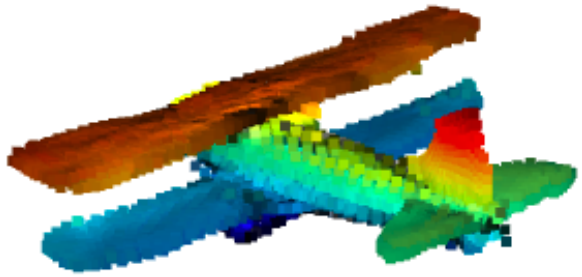
FoldingNet



AtlasNet



PCN



SoftPoolNet

Based on PointNet Features

SoftPoolNet Features

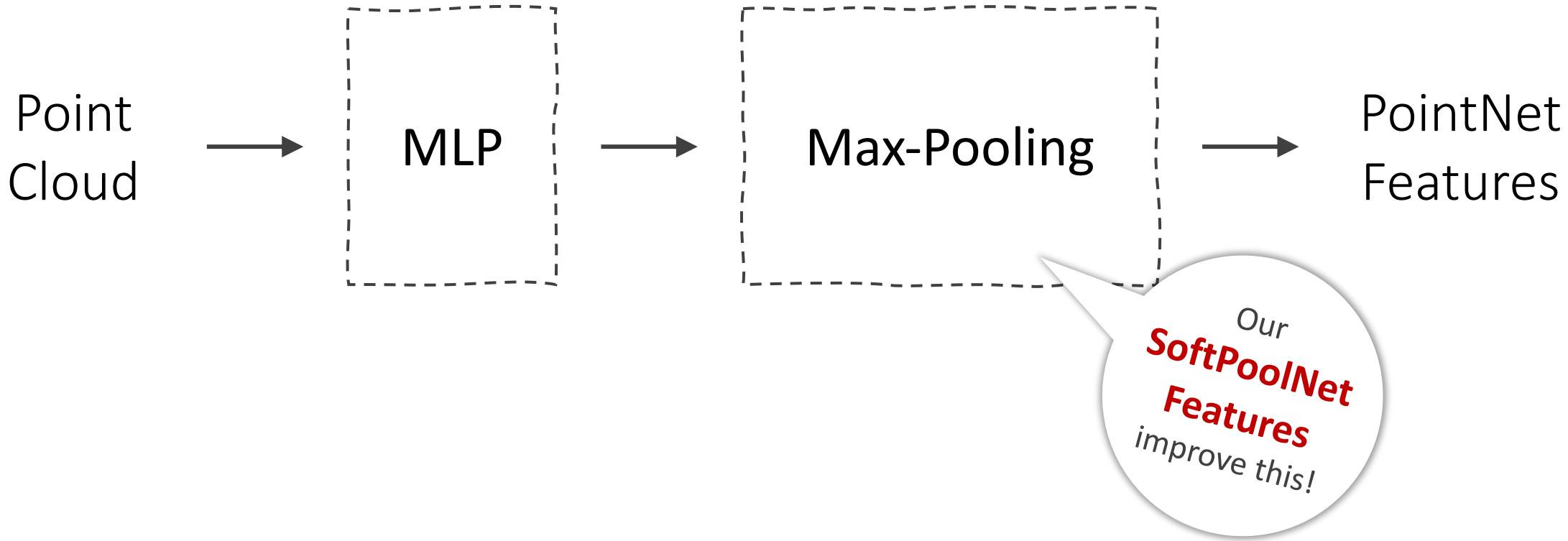
[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

2. Computer Science *– selected works from conferences*

SoftPoolNet

[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

2. Computer Science – *selected works from conferences*

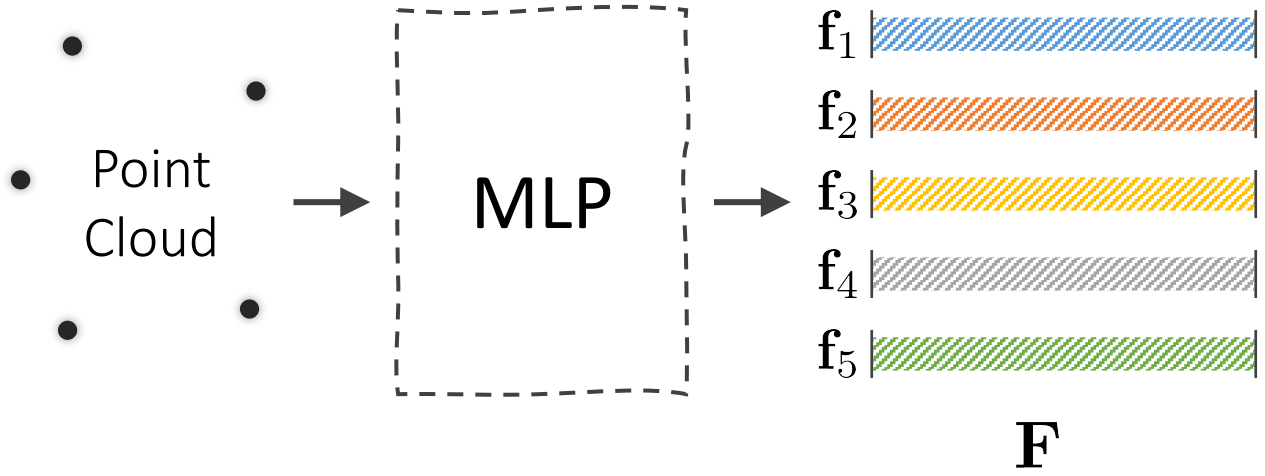


[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

2. Computer Science – *selected works from conferences*

Given the results from MLP with one feature vector per point

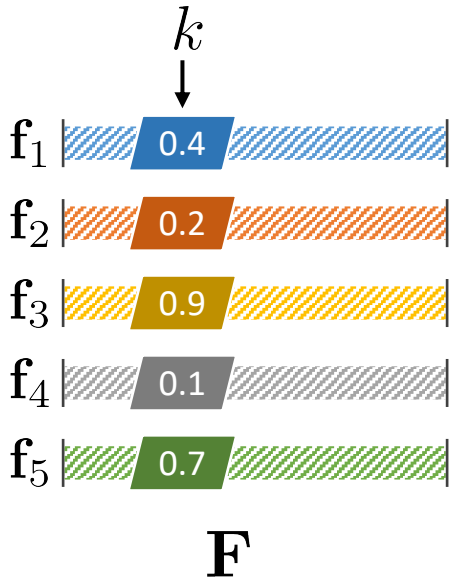
(In this toy example, there are 5 points)



[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

2. Computer Science – *selected works from conferences*

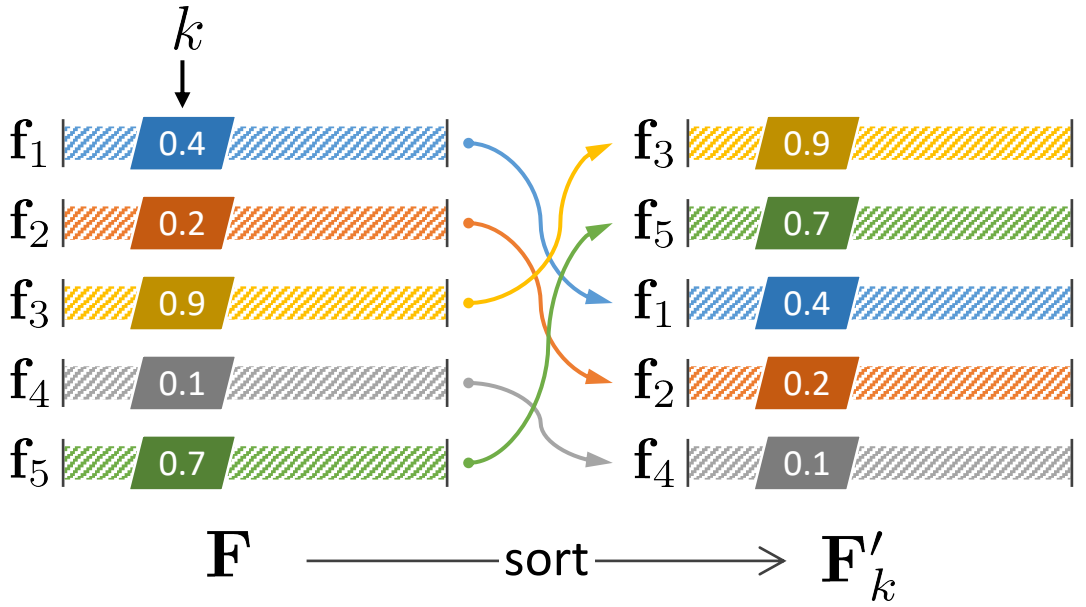
We look at the *k*-th column



[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

2. Computer Science – *selected works from conferences*

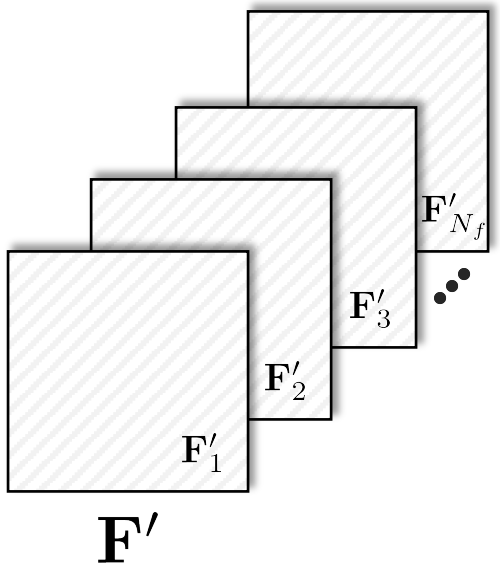
And sort the vectors in a descending order.



[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

2. Computer Science *– selected works from conferences*

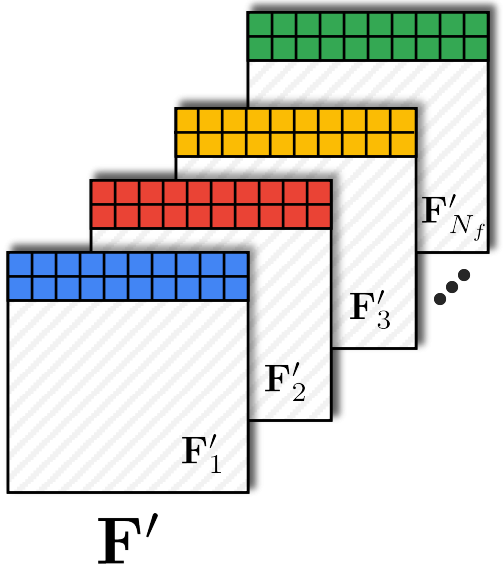
We do this for all the columns.



[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

2. Computer Science *– selected works from conferences*

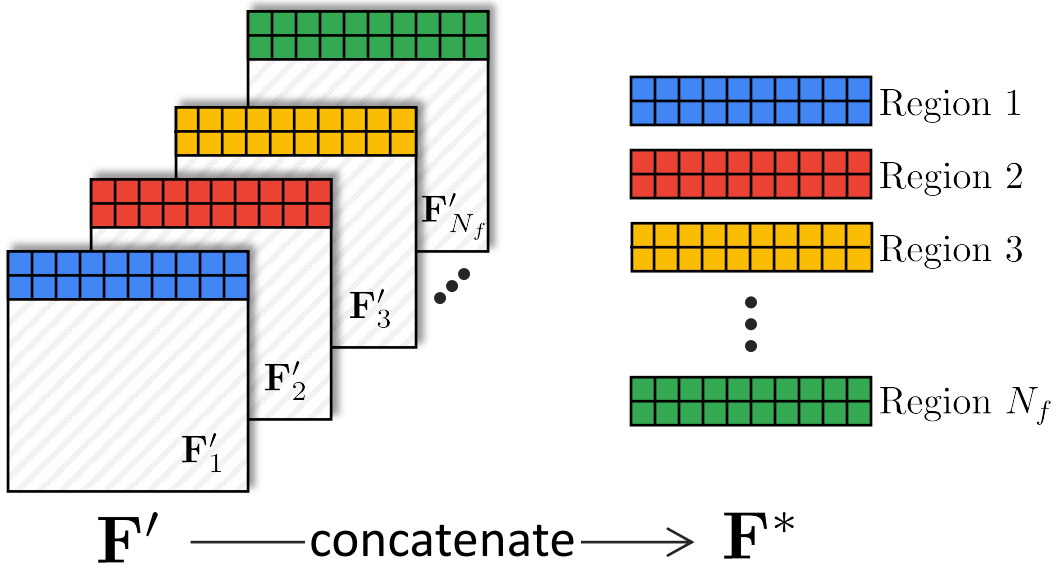
The SoftPoolNet features then take the first few rows of each matrix.



[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

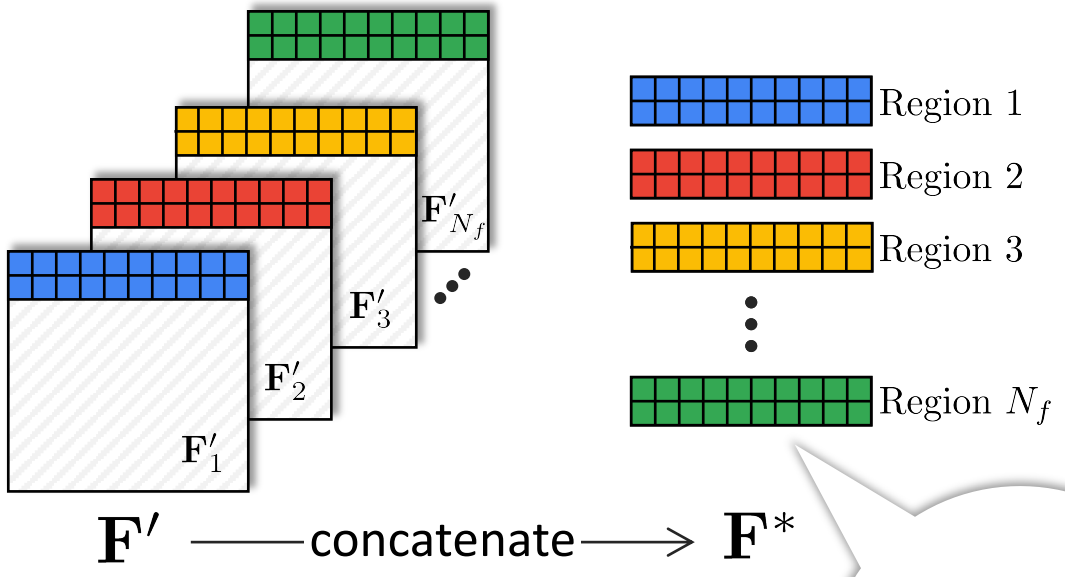
2. Computer Science – *selected works from conferences*

The SoftPoolNet features then take the first few rows of each matrix.



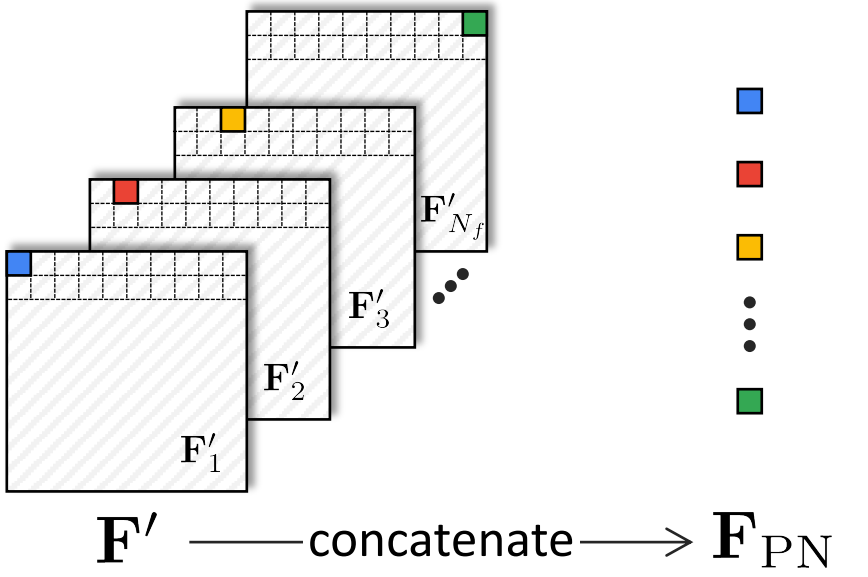
[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

SoftPoolNet Features



Stores more information!

PointNet Features



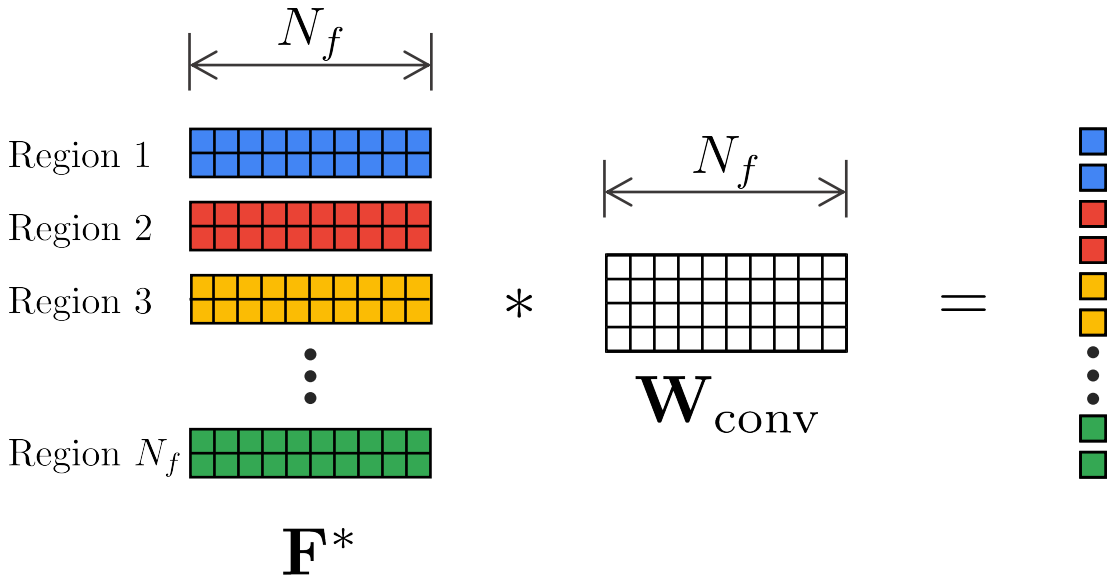
Max-Pooling

[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

2. Computer Science – *selected works from conferences*

Regional Convolutions

with kernels having the same length as the features

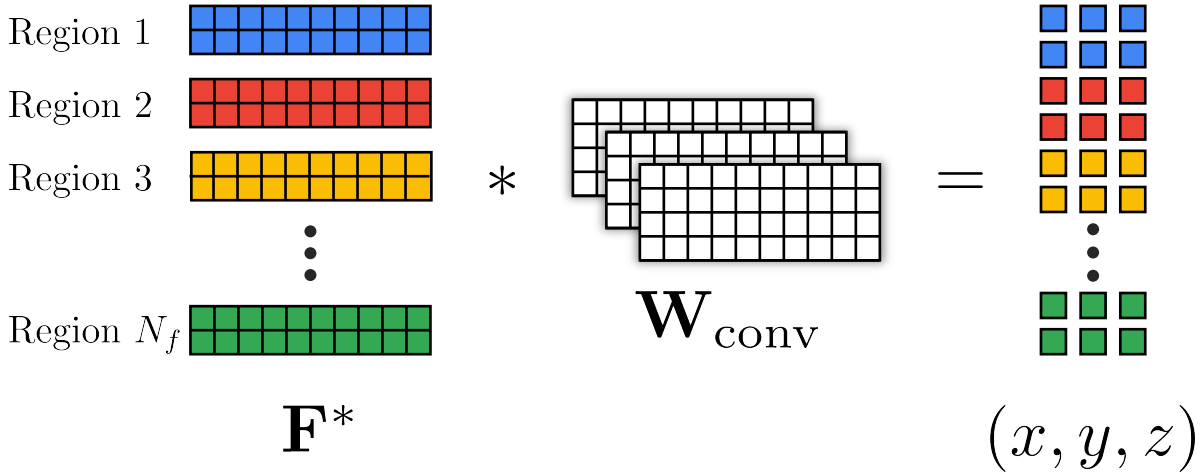


[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

2. Computer Science – *selected works from conferences*

Regional Convolutions

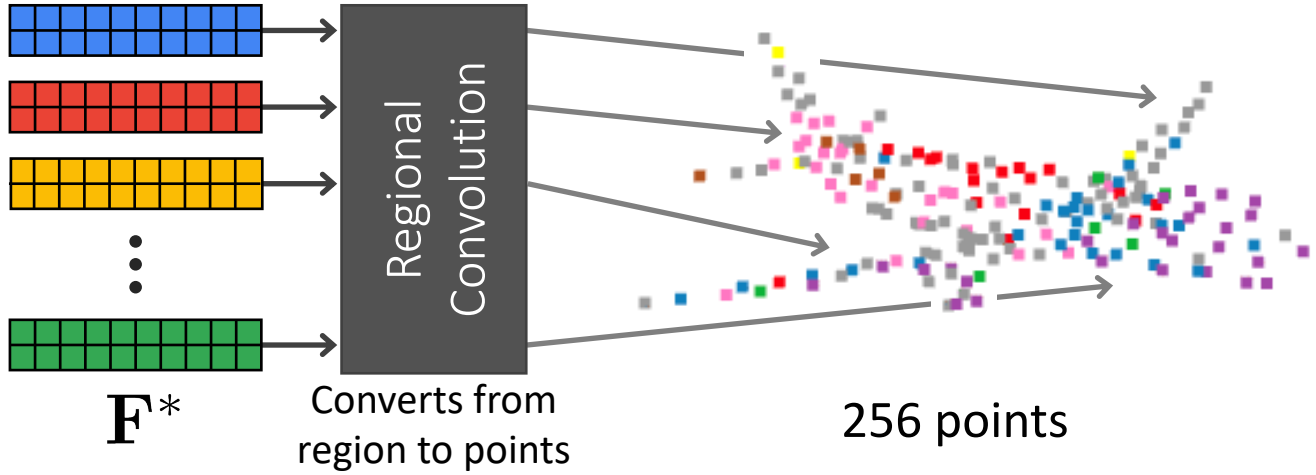
with kernels having the same length as the features



[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

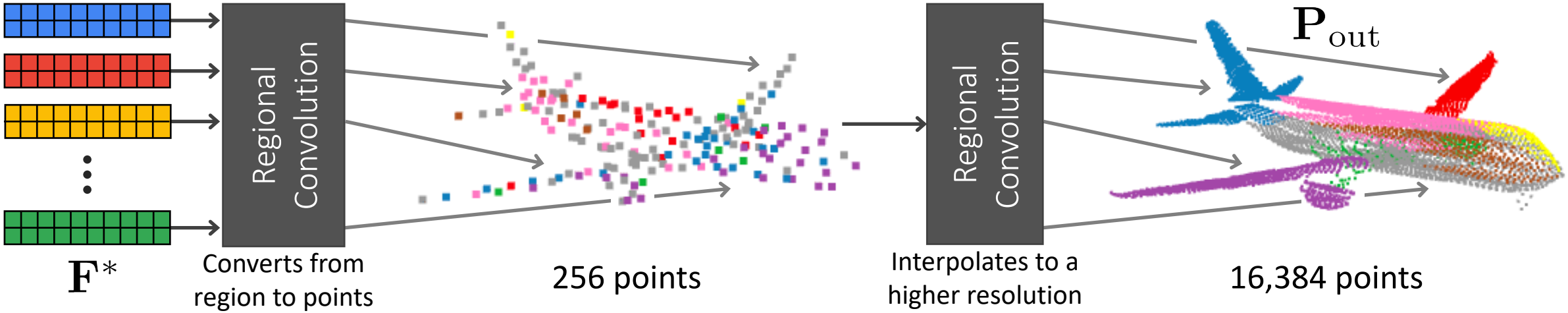
2. Computer Science – *selected works from conferences*

We then use the regional convolution to reconstruct a sparse point cloud.



[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

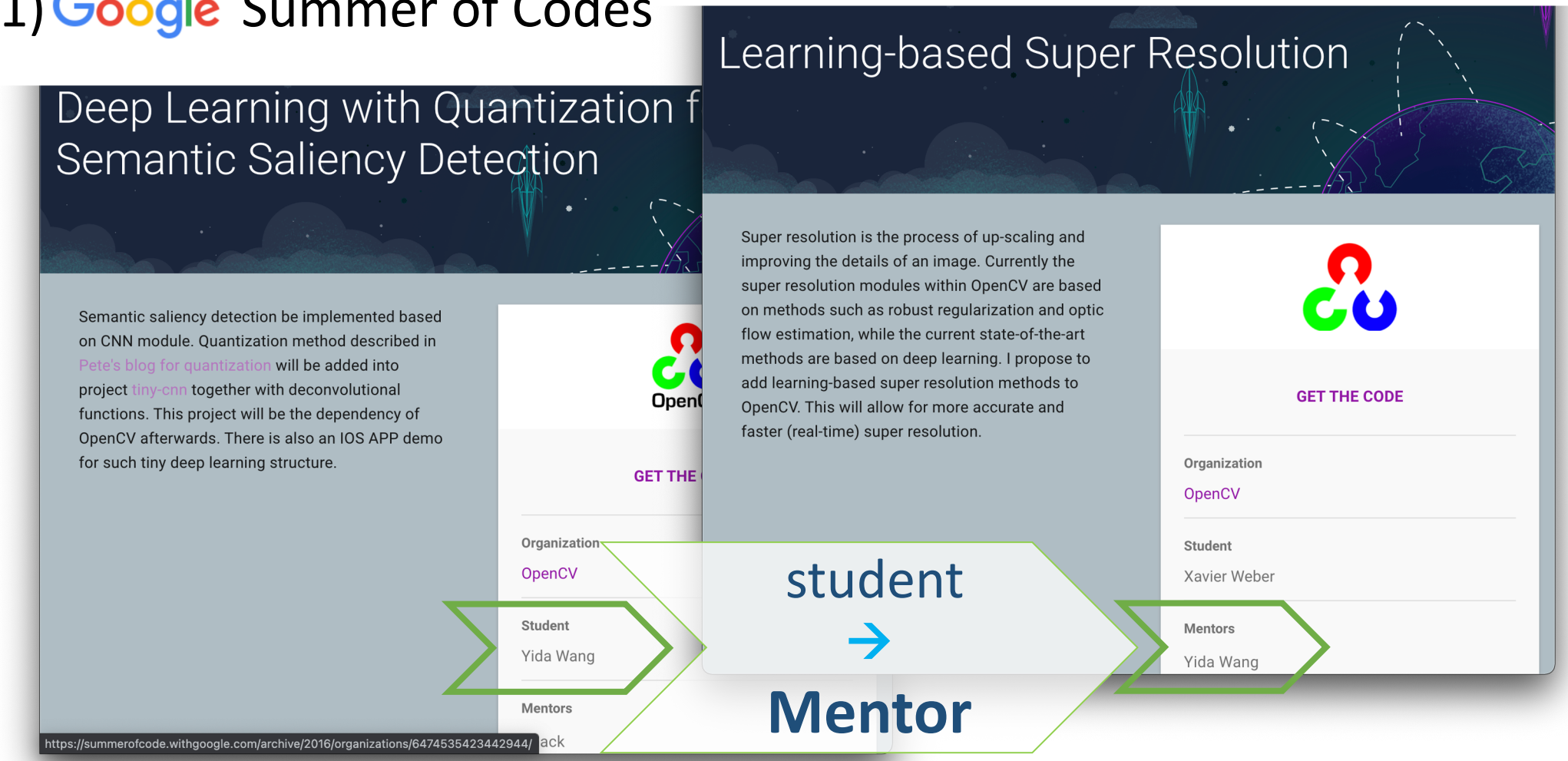
2. Computer Science – *selected works from conferences*



[3] SoftPoolNet: Shape Descriptor for Point Cloud Completion and Classification – ECCV 2020 oral

3. Research Engineering – *selected works from companies*

(1) Google Summer of Codes

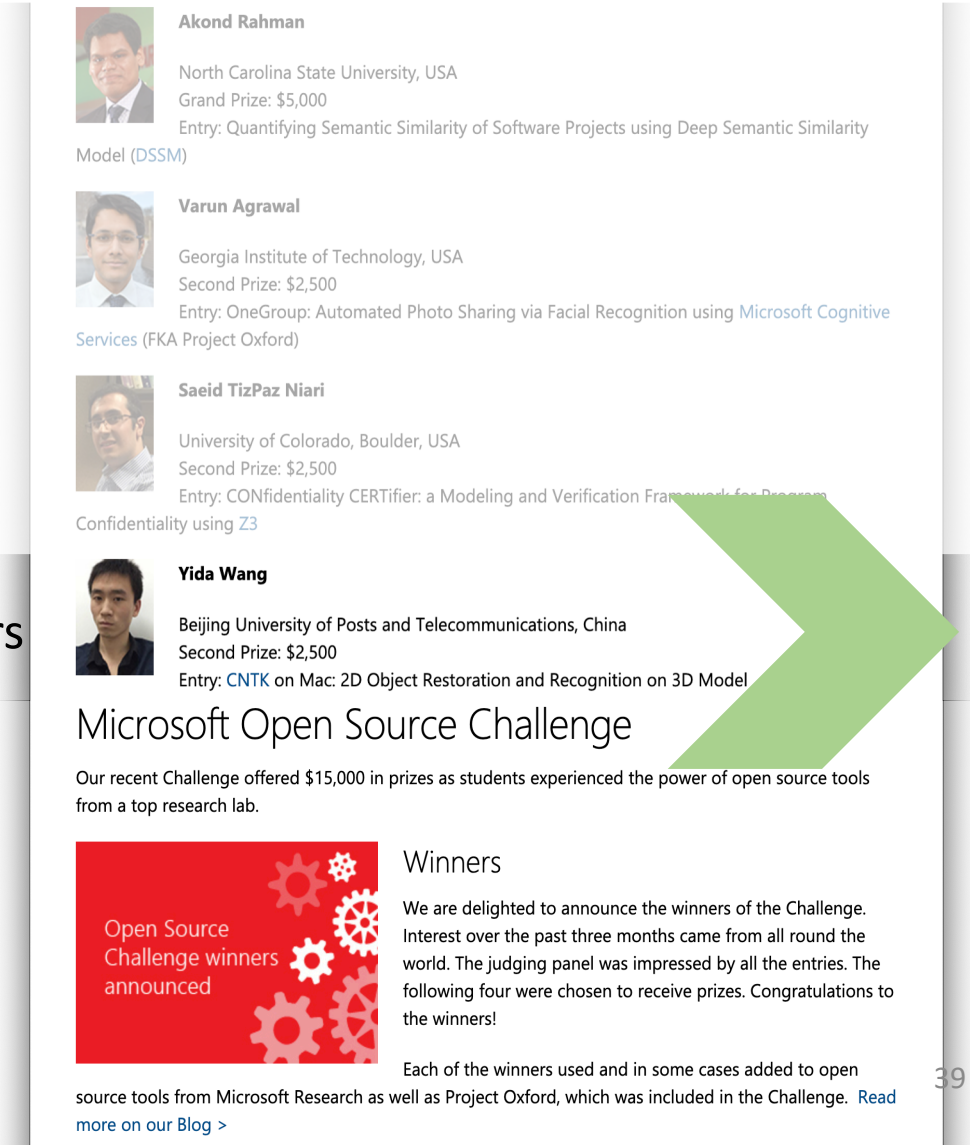


3. Research Engineering – *selected works from companies*

(2) Microsoft Open Source Challenge

- Global 2nd prize in (4 winners in total)
- Invited talk in Microsft Faculty Summit 2016

First few works reimplementing papers *with* **CNTK**



Akond Rahman

North Carolina State University, USA
Grand Prize: $5,000
Entry: Quantifying Semantic Similarity of Software Projects using Deep Semantic Similarity Model (DSSM)

Varun Agrawal

Georgia Institute of Technology, USA
Second Prize: $2,500
Entry: OneGroup: Automated Photo Sharing via Facial Recognition using Microsoft Cognitive Services (FKA Project Oxford)

Saeid TizPaz Niari

University of Colorado, Boulder, USA
Second Prize: $2,500
Entry: CONfidentiality CERTifier: a Modeling and Verification Framework for Program Confidentiality using Z3

Yida Wang

Beijing University of Posts and Telecommunications, China
Second Prize: $2,500
Entry: CNTK on Mac: 2D Object Restoration and Recognition on 3D Model

Microsoft Open Source Challenge

Our recent Challenge offered $15,000 in prizes as students experienced the power of open source tools from a top research lab.

Open Source Challenge winners announced

Winners

We are delighted to announce the winners of the Challenge. Interest over the past three months came from all round the world. The judging panel was impressed by all the entries. The following four were chosen to receive prizes. Congratulations to the winners!

Each of the winners used and in some cases added to open source tools from Microsoft Research as well as Project Oxford, which was included in the Challenge. Read more on our Blog >

3. Research Engineering – *selected works from companies*

(1) Google Summer of Codes

- Serving as project developer in 2015 and 2016
- Serving as project mentor in 2019

(2) Microsoft Open Source Challenge

- Global 2nd prize in (5 winners in total)
- Invited talk in Microsft Faculty Summit 2016

(3) Scilab Simulator Design Contest

- Global 1st prize in 2013
- AIS system simulation

(4) FACEBOOK Research Intern

- Research intern in Facebook Reality Lab for eye 3D reconstruction

4. Teaching and Mentoring

- Tutor for courses:
  1. Computer Vision and Deep Learning for Autonomous Driving
  2. Perception and Learning in Robotics and Augmented Reality
  3. Deep Adversarial Training

- Supervisor for master thesis:
  1. Variational Object-aware 3D Hand Pose from a Single RGB Image – Yafei Gao
  2. 3D Surface Registration Using Shape Completion – Mahsa Baghaei Heravi
  3. 3D Instances from a single RGB Image – Peter Mortimer

- Invited Talks:
  - Deploying deep learning models with Microsoft CNTK on MacBook at Microsoft
  - Oral presentation for SoftPoolNet on ECCV'20 ONLINE 23-28 AUGUST 2020

5. Technical Collaborators

Federico Tombari
from TUM/Google

Yafei Gao
from TUM

Yanyan Li
from TUM

Nassir Navab
from TUM

Pietro Falco
from ABB

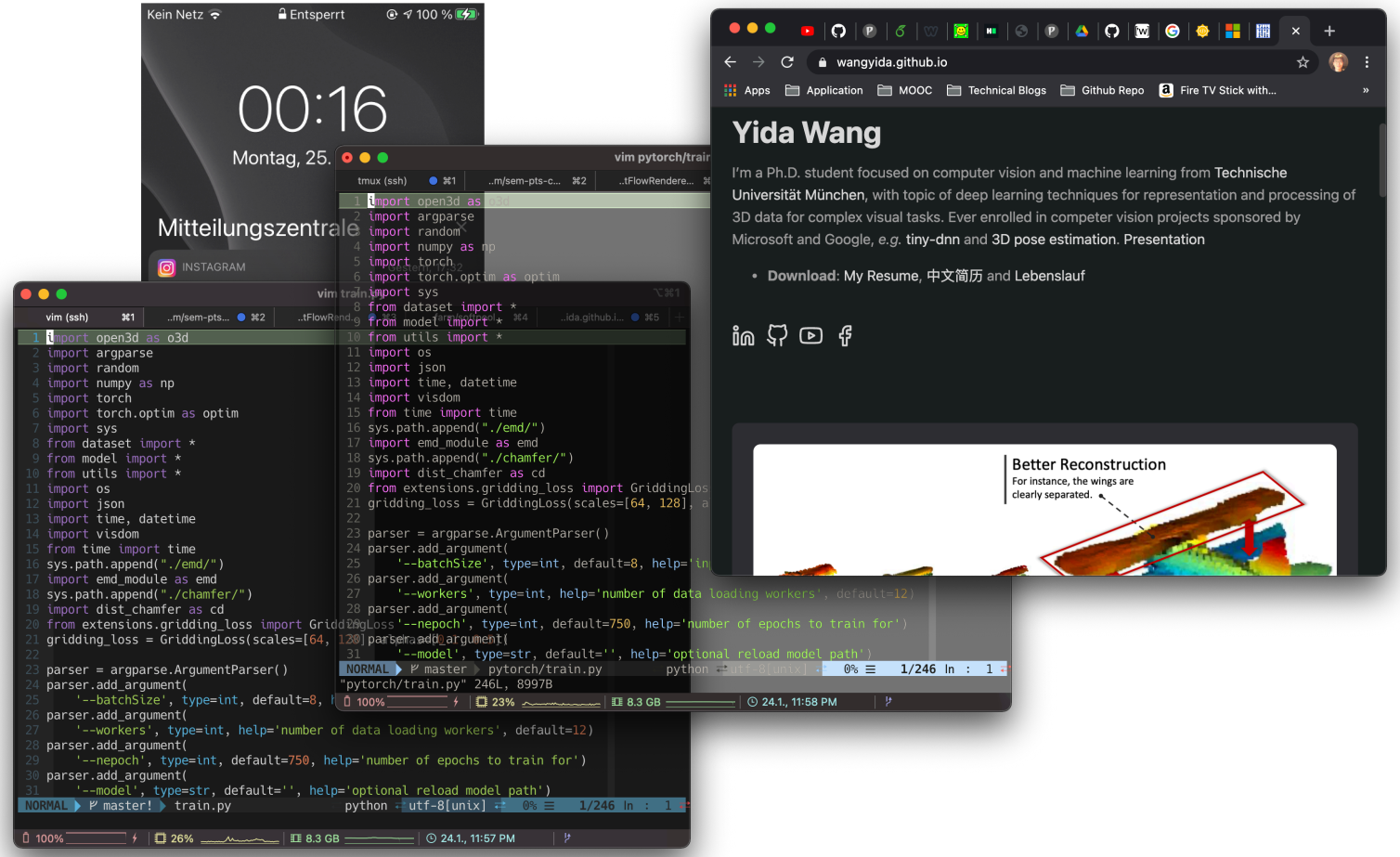
Nikolas Brasch
from TUM

David Joseph Tan
from Google

Yiru Shen
from Facebook

6. Other Facts

(1) I usually prefer to work with theme consistency



iPhone theme

Website theme

Laptop terminal theme

Station terminal theme

All configured with:

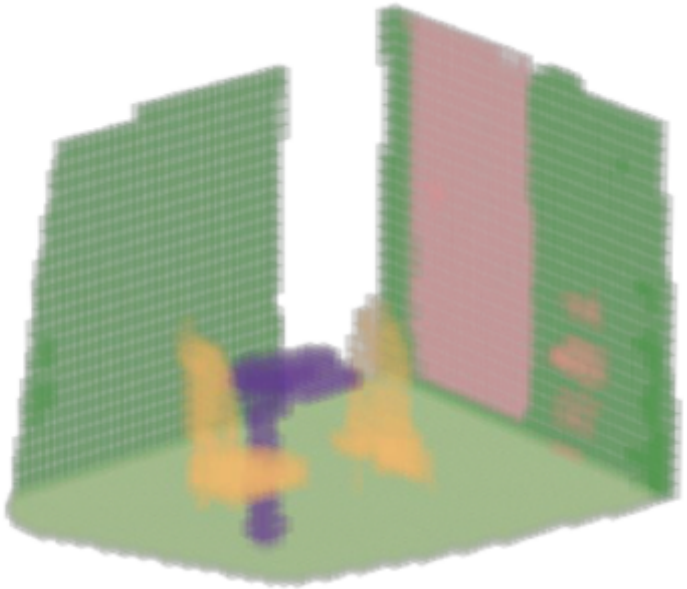
Base16 IR Black

Scheme author: Timothée Poisot (http://timotheepoisot.fr)

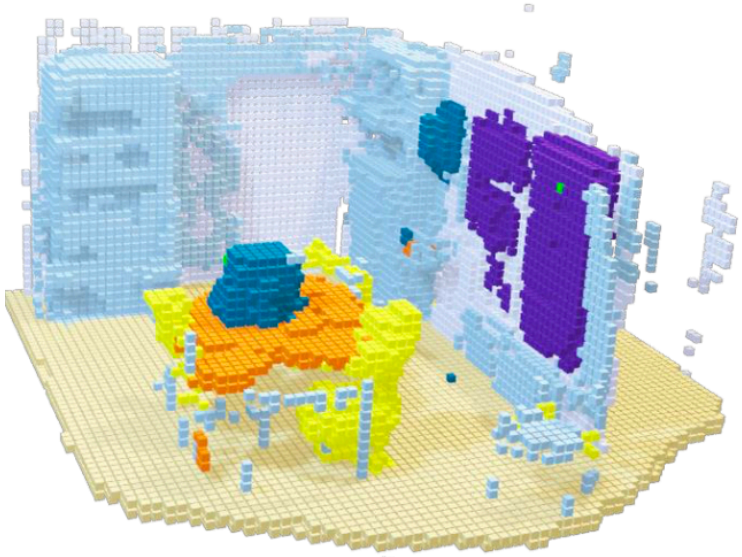
00	01	02	03	04	05	06	07
08	09	0A	0B	0C	0D	0E	0F

6. Other Facts

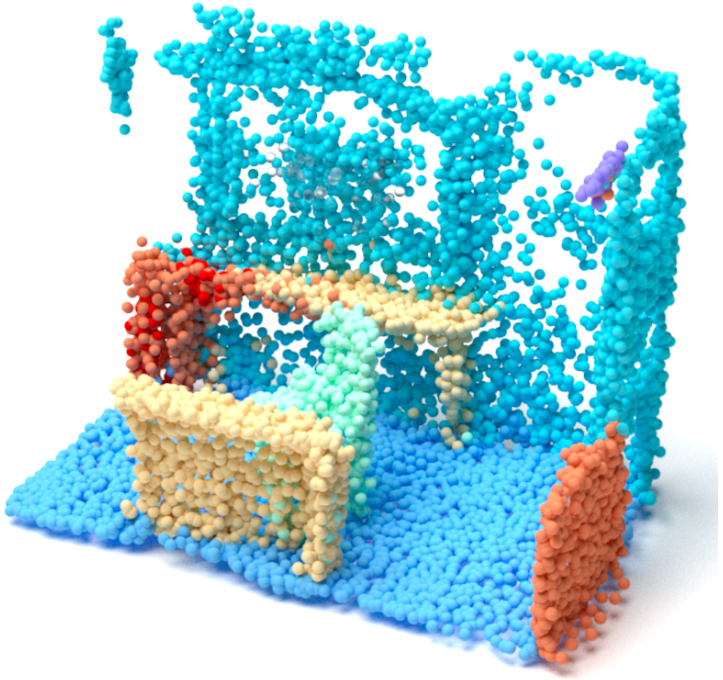
(2) I do like investigating CG rendering



2017 3DV



2019 ICCV



2021 *to be released…*

6. Other Facts

(3) Sports and entertainments of mine

1. I have won a bronze for triathlon, tried for full Marathon for several times
2. Ever won gold and bronze in capital university students track and fileds games (400m hurdle)

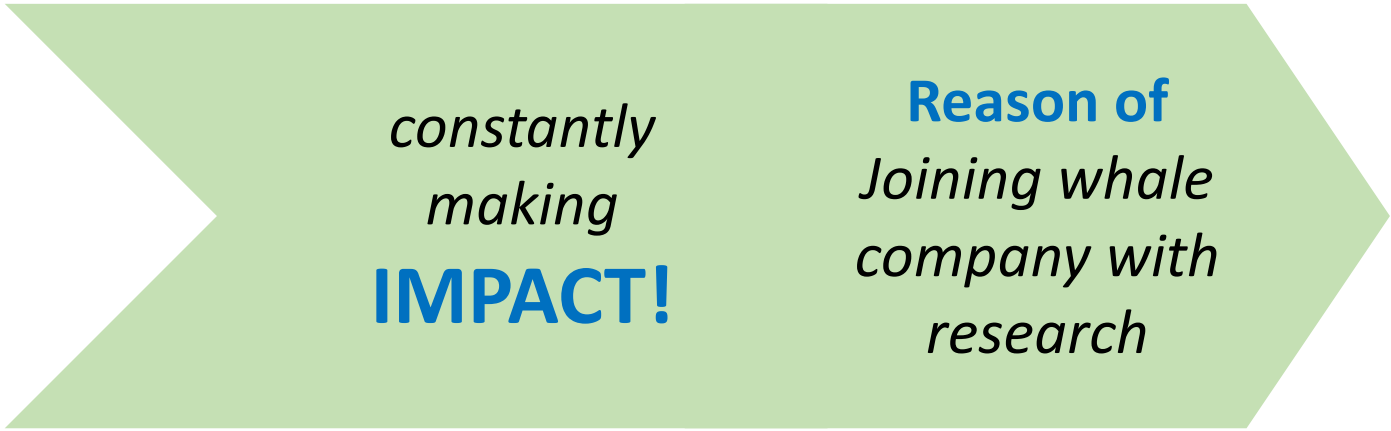
Back to the Beginning

1. Academic Experience
2. Computer Science
3. Research Engineering
4. Teaching and Mentoring
5. Technical Collaborators
6. Fun facts

How to constantly making
IMPACT?

Summary

1. Building connection among techs with theories
2. Iteratively updating theories for techs
3. Sharing
4. Engineering for human
5. Teaching and Mentoring



Thanks!

Jan.26, 2021

Technical University of Munich