



# Yida

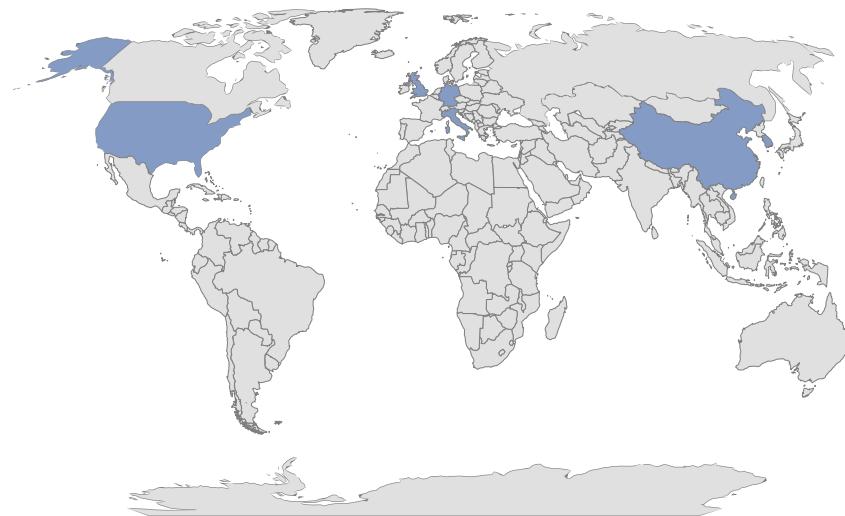
WANG



# Background



Countries in which I have been working



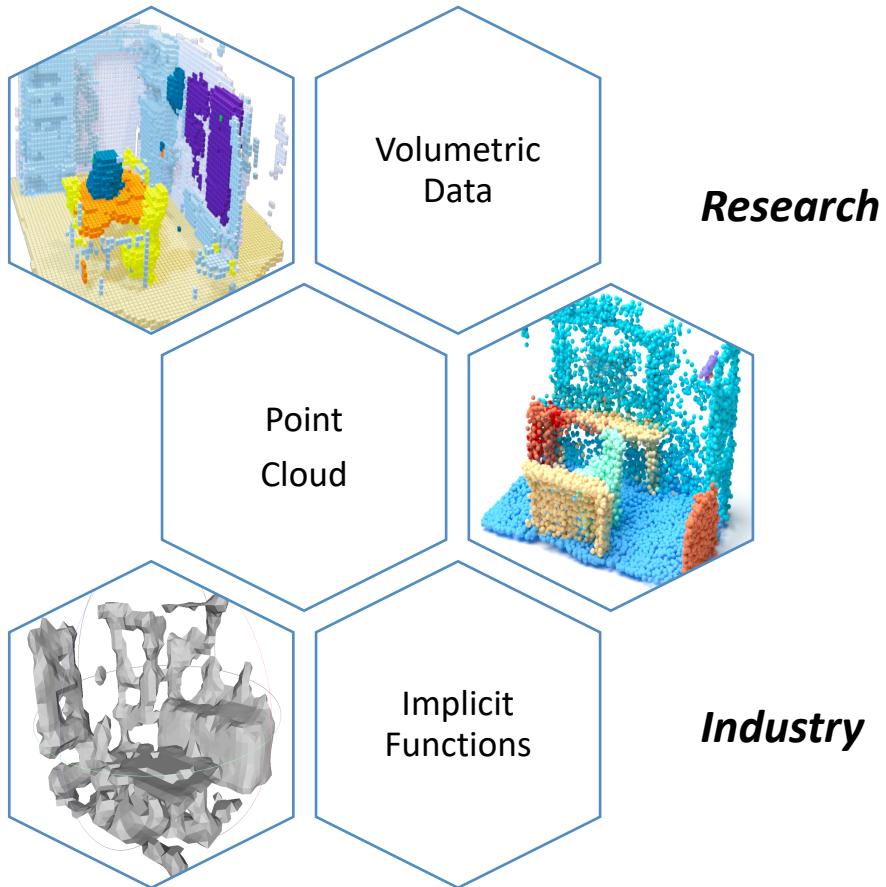
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# Overview

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

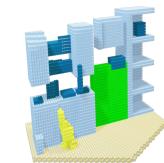


# 1. Academic Background



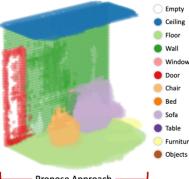
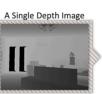
## [1]. ICCV

- Seoul, S Korea
- 3D CV



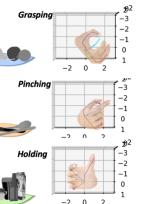
## [2]. 3DV

- Verona, Italy
- 3D CV



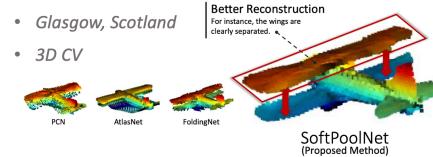
## [3]. IROS

- Macau, China
- Robotics



## [4]. ECCV

- Glasgow, Scotland
- 3D CV



## (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 Microsoft Faculty Summit 2016

## (3) Scilab Simulator Design Contest

- Global 1st prize in 2013
- AIS system simulation

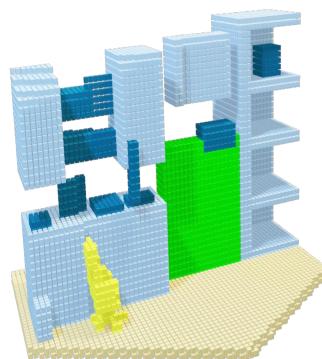
## (4) FACEBOOK Research Intern

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

## 2. Computer Science – selected works from conferences

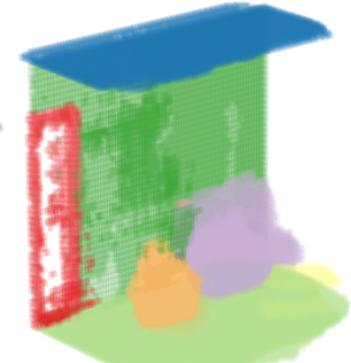
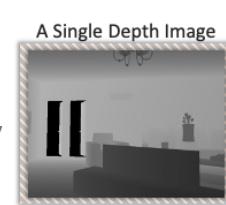
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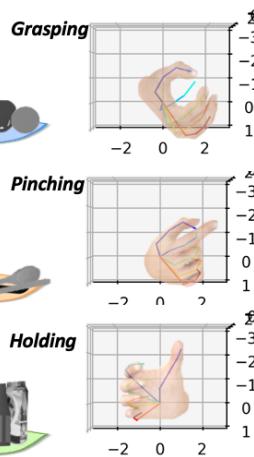
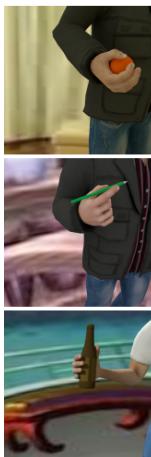


Empty  
Ceiling  
Floor  
Wall  
Window  
Door  
Chair  
Bed  
Sofa  
Table  
Furniture  
Objects

Propose Approach

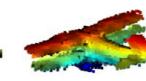
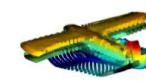
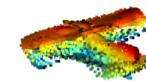
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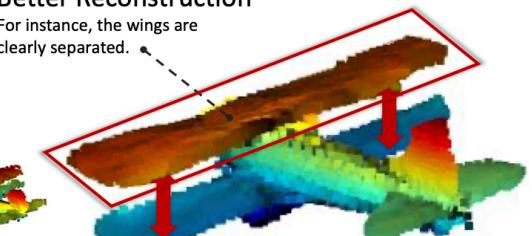
### [4]. ECCV

- Glasgow, Scotland
- 3D CV



Better Reconstruction

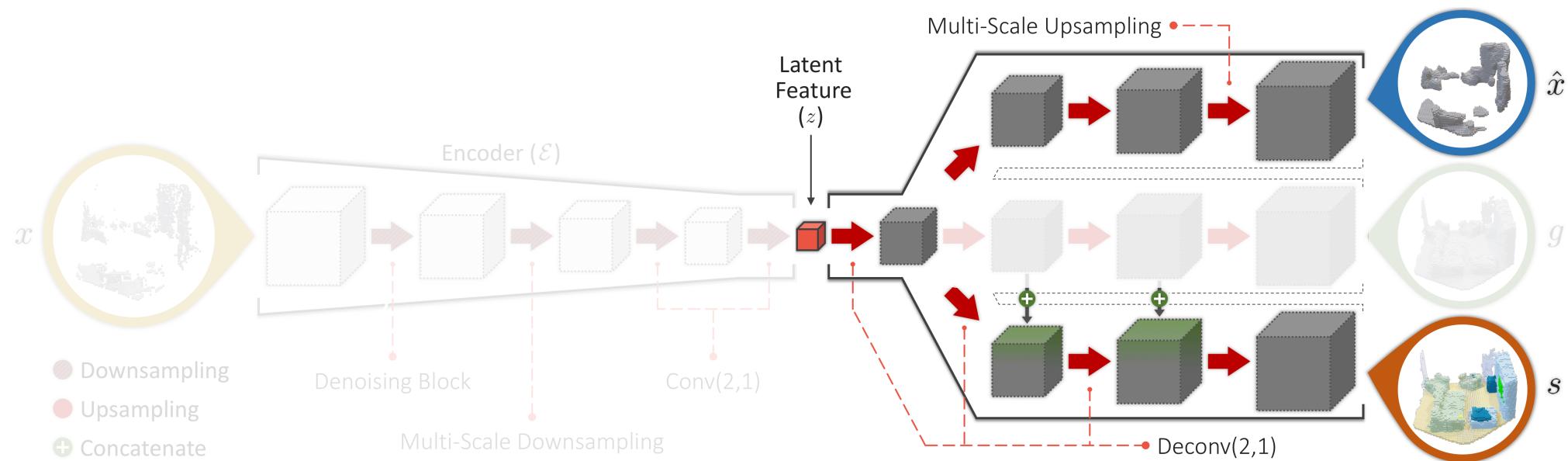
For instance, the wings are clearly separated.



SoftPoolNet  
(Proposed Method)

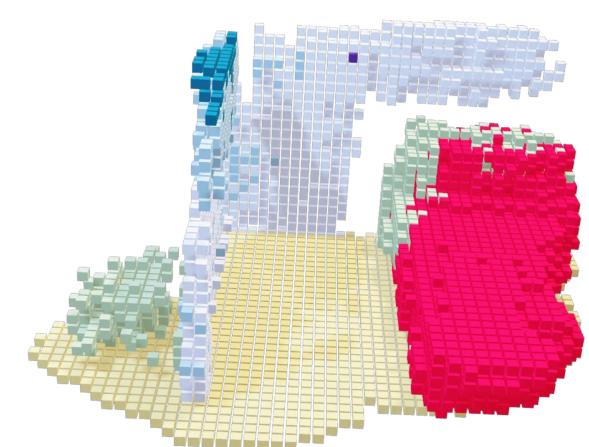
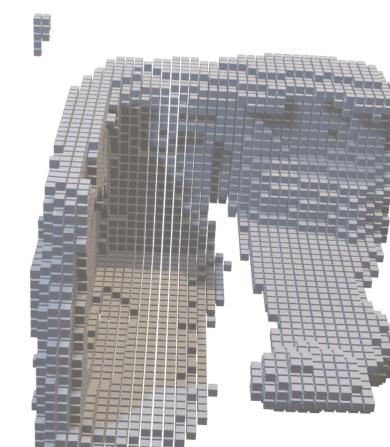
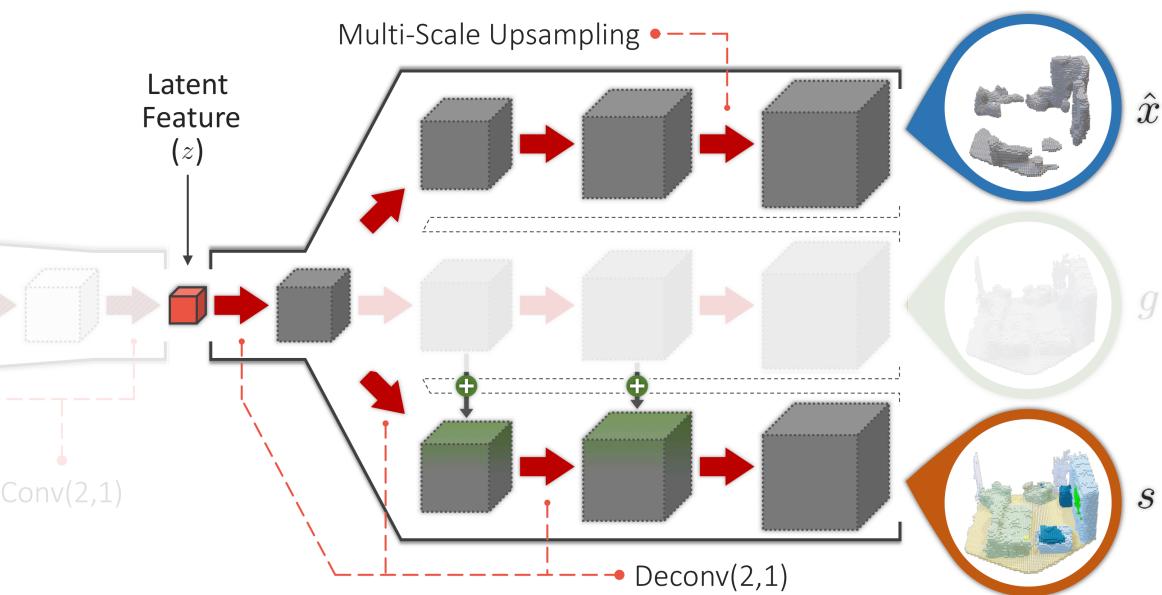
## 2. Computer Science – selected works from conferences

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



## 2. Computer Science – selected works from conferences

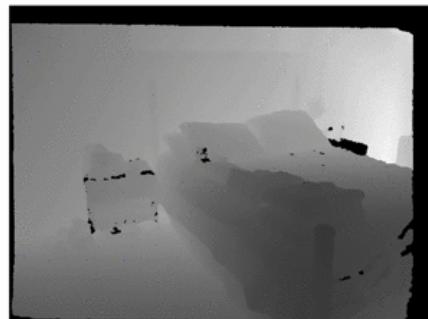
### [1] ForkNet: Multi-branch Volumetric Semantic Completion from a Single Depth Image



## 2. Computer Science – *selected works from conferences*

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

**Indoor Scene Semantic Completion**



Input: Single depth image

**ForkNet**



Ground truth

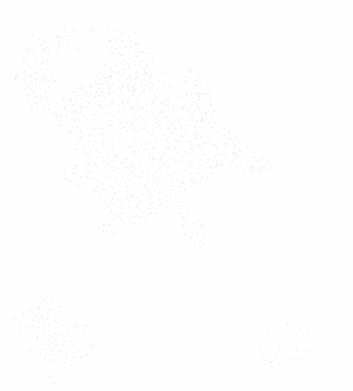
SSCNet

**Object Completion**



Input: Partial scan

**ForkNet**

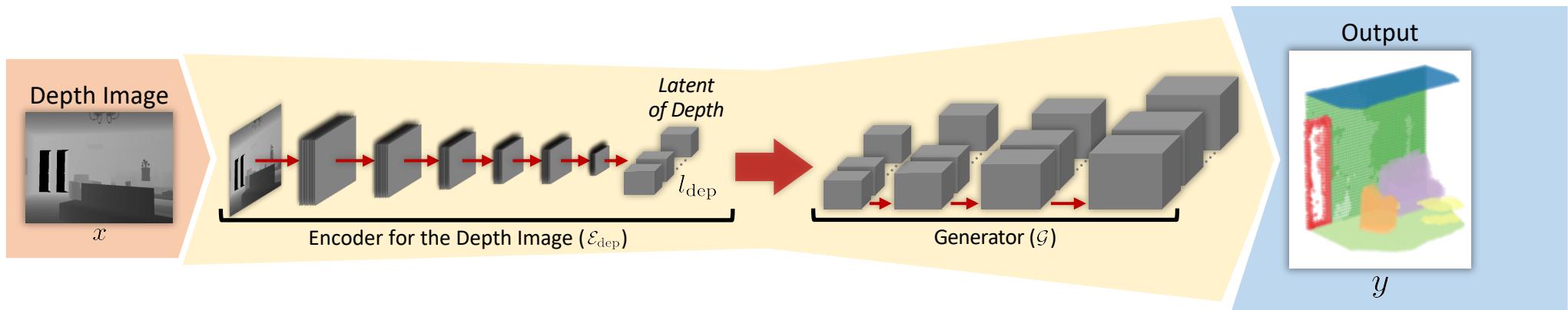


Ground truth

3D-RecGAN

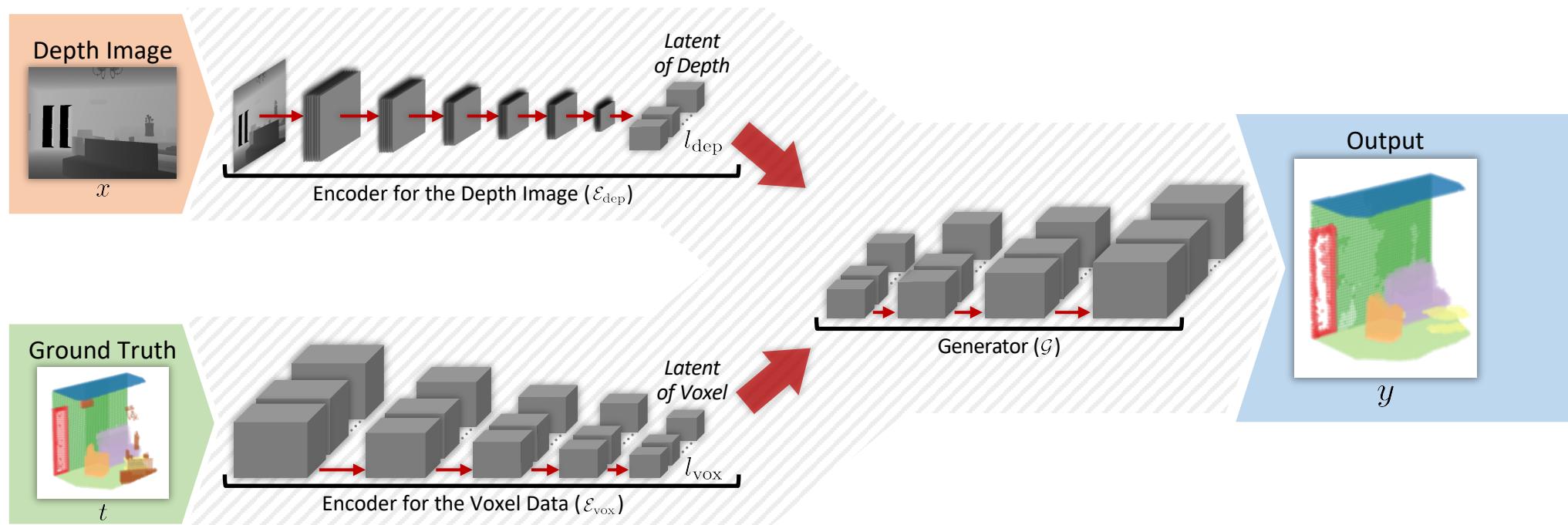
## 2. Computer Science – selected works from conferences

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



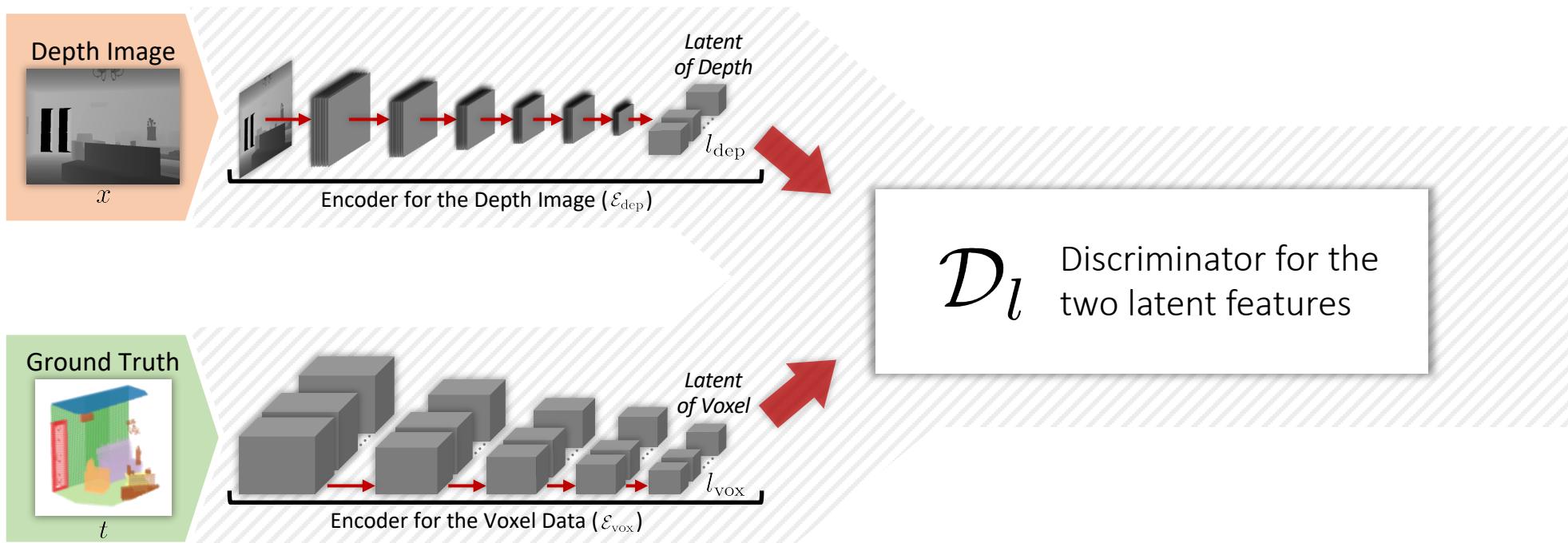
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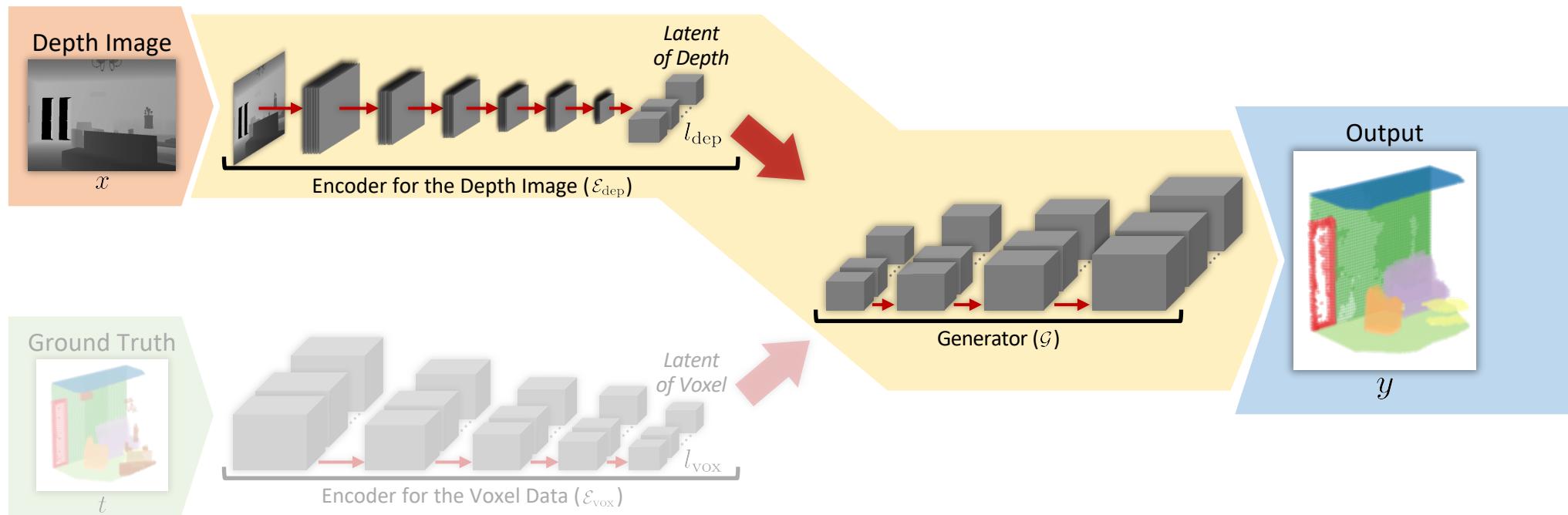
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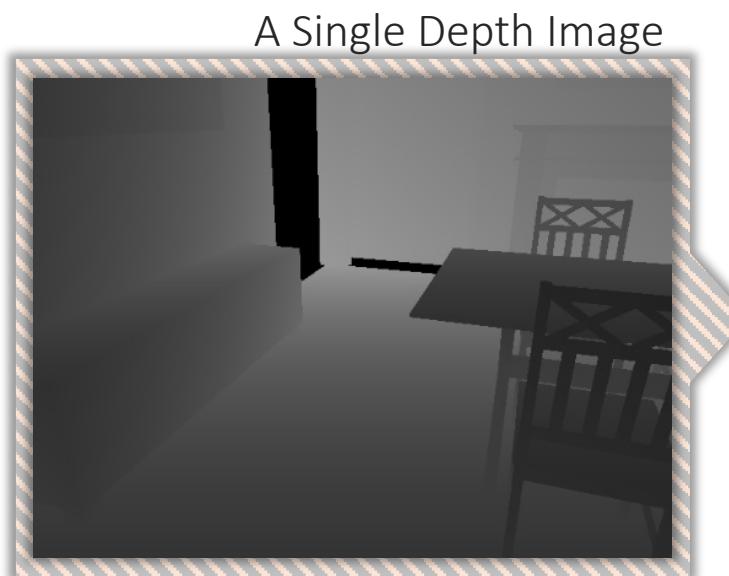
## 2. Computer Science – selected works from conferences

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



## 2. Computer Science – *selected works from conferences*

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



### 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 Microsoft Faculty Summit 2016

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#### (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

# 3. Research Engineering – selected works from companies

## (1) Google Summer of Codes

The diagram illustrates the relationship between two Google Summer of Code projects: "Deep Learning with Quantization for Semantic Saliency Detection" and "Learning-based Super Resolution".

**Project 1: Deep Learning with Quantization for Semantic Saliency Detection**

- Description:** Semantic saliency detection will be implemented based on CNN module. Quantization method described in [Pete's blog for quantization](#) will be added into project [tiny-cnn](#) together with deconvolutional functions. This project will be the dependency of OpenCV afterwards. There is also an IOS APP demo for such tiny deep learning structure.
- Organization:** OpenCV
- Student:** Yida Wang
- Mentors:** Yida Wang

**Project 2: Learning-based Super Resolution**

- Description:** Super resolution is the process of up-scaling and improving the details of an image. Currently the super resolution modules within OpenCV are based on methods such as robust regularization and optic flow estimation, while the current state-of-the-art methods are based on deep learning. I propose to add learning-based super resolution methods to OpenCV. This will allow for more accurate and faster (real-time) super resolution.
- Organization:** OpenCV
- Student:** Xavier Weber
- Mentors:** Yida Wang

A large green arrow points from the "student" section of Project 1 to the "Mentor" section of Project 2, indicating a connection or collaboration between the two students.

<https://summerofcode.withgoogle.com/archive/2016/organizations/6474535423442944/>

### 3. Research Engineering – selected works from companies

#### (2) Microsoft Open Source Challenge

- Global 2nd prize in (4 winners in total)
- Invited talk in Microsoft 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 Reasoning about 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.



##### 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 >

# 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



# 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*



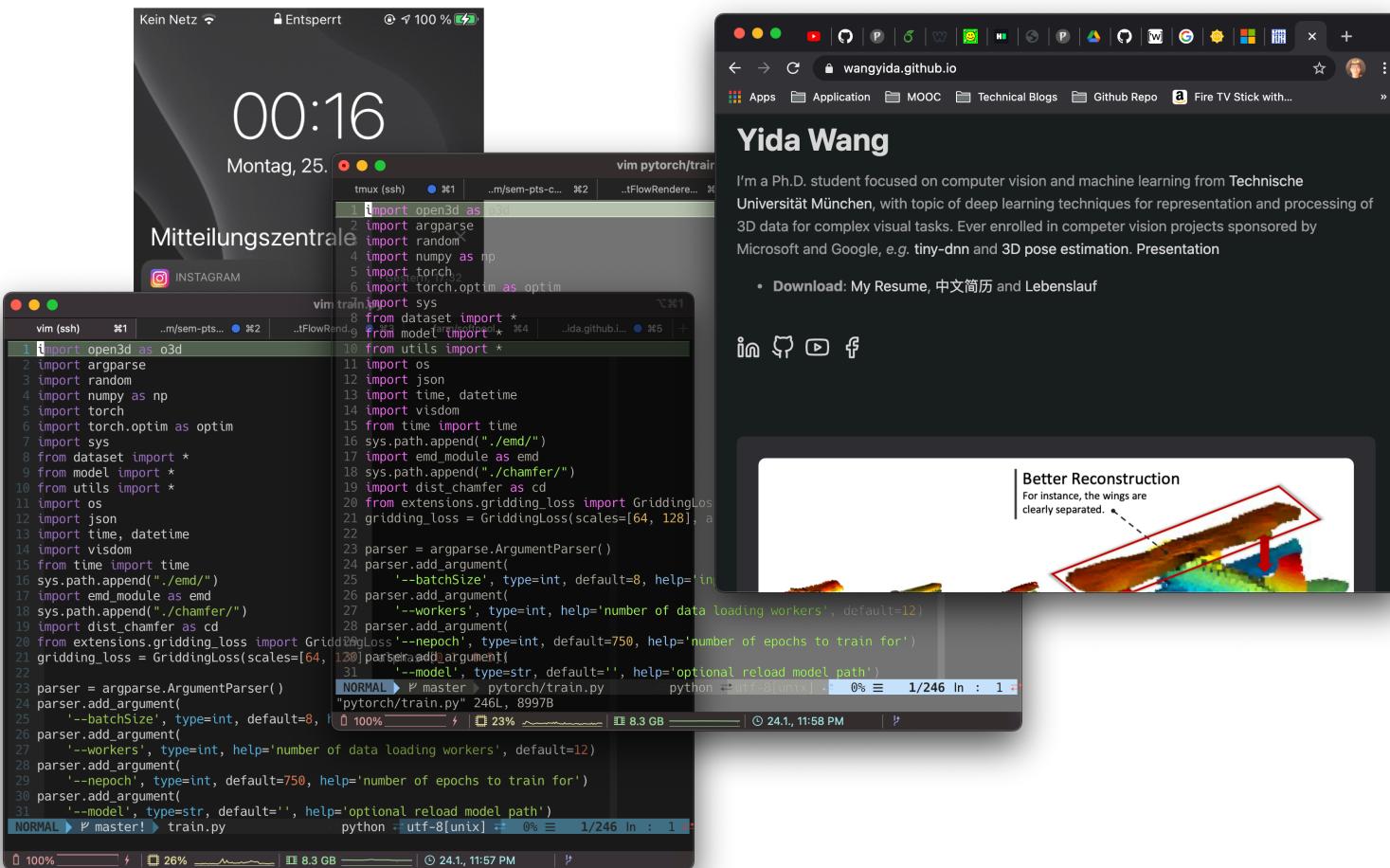
David Joseph Tan  
*from Google*



Yiru Shen  
*from Facebook*

# 6. Fun Facts

## (1) I usually prefer to work with theme consistency



iPhone theme

Website theme

Laptop terminal theme

Station terminal theme

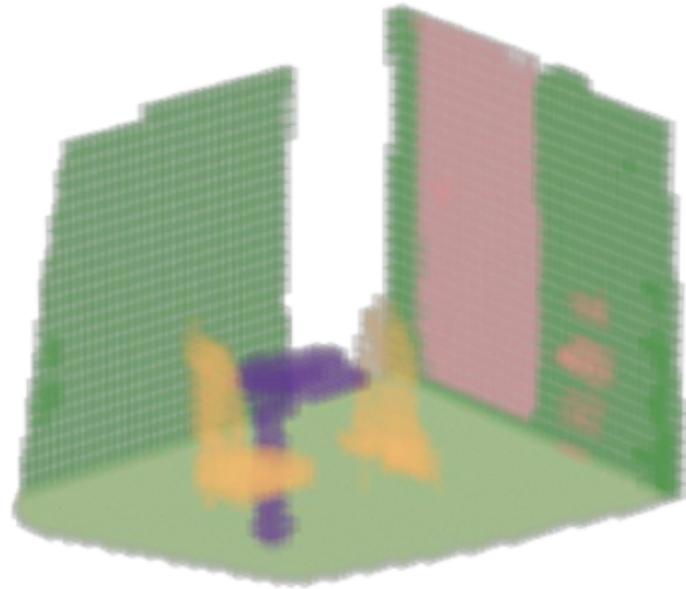
All configured  
with:  
**Base16 IR Black**

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

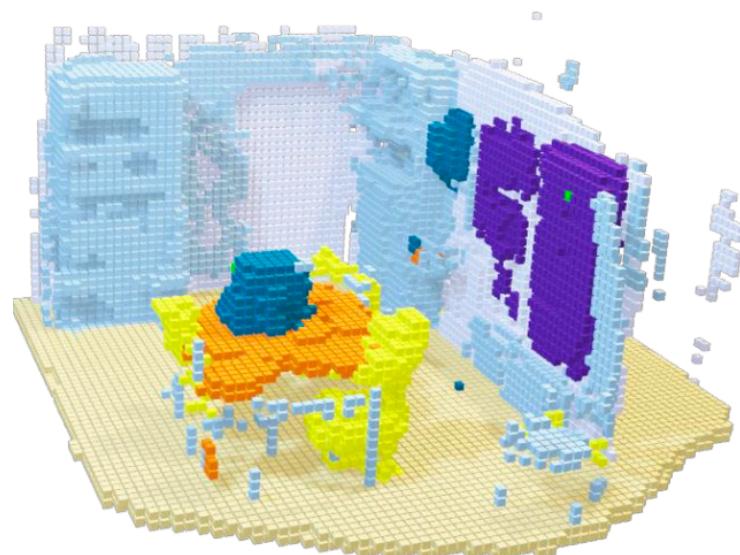


# 6. Fun Facts

(2) I do like investigating CG rendering



2017 3DV



2019 ICCV



2021 *to be released...*

# Back to the Beginning

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



# Summary

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

