

# Yumin Suh

[Google Scholar Profile](#)

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I am a senior researcher at NEC Laboratories America. My current research focuses on large vision-language model and visual representation that interacts with language.

## Work Experience

**NEC Laboratories America** | [Media Analytics department](#)

**June 2024 – Present**

*Senior Researcher*

*San Jose, CA*

- Develop generative Large Vision-Language Models that take images/videos along with text as input and produce language outputs

**NEC Laboratories America** | [Media Analytics department](#)

**December 2019 – May 2024**

*Researcher*

*San Jose, CA*

- Developed a unified model that performs multiple tasks for rich human analysis

**Microsoft Research Asia**

**September 2016 – June 2017**

*Research Intern*

*Mentors: [Jingdong Wang](#), [Tao Mei](#)*

- Proposed a visual representation for person re-identification ([Publication](#) cited 600+ times)

**Inria** | *WILLOW team*

**December 2014 – May 2015**

*Research Intern*

*Mentors: [Minsu Cho](#), [Jean Ponce](#)*

## Education

**Seoul National University**

**Apr. 2019 – Nov. 2019**

*Postdoc*

*Advisors: [Bohyung Han](#), [Kyoung Mu Lee](#)*

**Seoul National University**

**Mar. 2014 – Feb 2019**

*Ph.D., Electrical and Computer Engineering*

*Advisor: [Kyoung Mu Lee](#)*

**Seoul National University**

**Mar. 2011 – Feb. 2013**

*M.S., Electrical Engineering and Computer Science*

*Advisor: [Kyoung Mu Lee](#)*

**Seoul National University**

**Mar. 2007 – Feb. 2011**

*B.S., Electrical Engineering*

## Workshop Organization

**2nd OmniLabel workshop at ECCV 2024** [[Workshop](#)][[Benchmark](#)][[Challenge](#)]

Organizers: Vijay Kumar B G, [Yumin Suh](#), Samuel Schuler, Shiyu Zhao, Long Zhao, Dimitris N. Metaxas

**1st OmniLabel workshop at CVPR 2023** [[Workshop](#)][[Benchmark](#)][[Challenge](#)]

Organizers: Samuel Schuler, Vijay Kumar B G, [Yumin Suh](#), Golnaz Ghiasi, Long Zhao, Qi Yu, Dimitris N. Metaxas

- Workshop to promote research on **language-based vision perception** system beyond simple category names
- New [benchmark](#) for language-based object detection

## Papers

**Improving the Efficiency-Accuracy Tradeoff of DETR-Style Models in Practice**

[Yumin Suh](#), Dongwan Kim, Abhishek Aich, Samuel Schuler, Jong-Chyi Su, Bohyung Han,

Manmohan Chandraker

[ECV Workshop at CVPR 2024](#)

**Generating Enhanced Negatives for Training Language-Based Object Detectors**

Shiyu Zhao, Long Zhao, Vijay Kumar BG, [Yumin Suh](#), Dimitris N. Metaxas, Manmohan Chandraker,

Samuel Schuler

**CVPR 2024**

**Taming Self-Training for Open-Vocabulary Object Detection**

Shiyu Zhao, Samuel Schuler, Long Zhao, Zhixing Zhang, Vijay Kumar BG, [Yumin Suh](#), Manmohan Chandraker,

Dimitris N. Metaxas

**CVPR 2024**

**Efficient Controllable Multi-Task Architectures**

Abhishek Aich, Samuel Schuler, Amit K. Roy-Chowdhury, Manmohan Chandraker, [Yumin Suh](#)

**ICCV 2023**

## OmniLabel: A Challenging Benchmark for Language-Based Object Detection

Samuel Schuster, Vijay Kumar B G, [Yumin Suh](#), Konstantinos M. Dafnis\*, Zhixing Zhang\*, Shiyu Zhao\*, Dimitris Metaxas (\* equal technical contribution, alphabetic order)

ICCV 2023 (Oral)

- New *dataset and benchmark* for *language-based detection*. Hosted the Omnilabel workshop in CVPR 2023

## Confidence and Dispersity Speak: Characterizing Prediction Matrix for Unsupervised Accuracy Estimation

Weijian Deng, [Yumin Suh](#), Stephen Gould, Liang Zheng

ICML 2023

## Split to Learn: Gradient Split for Multi-Task Human Image Analysis

Weijian Deng, [Yumin Suh](#), Xiang Yu, Masoud Faraki, Liang Zheng, Manmohan Chandraker

WACV 2023

## Learning Semantic Segmentation from Multiple Datasets with Label Shifts

Dongwan Kim, Yi-Hsuan Tsai, [Yumin Suh](#), Masoud Faraki, Sparsh Garg, Manmohan Chandraker, Bohyung Han

ECCV 2022

## Controllable Dynamic Multi-Task Architectures

Dripta S. Raychaudhuri, [Yumin Suh](#), Samuel Schuster, Xiang Yu, Masoud Faraki, Amit K. Roy-Chowdhury, Manmohan Chandraker

CVPR 2022 (Oral)

## On Generalizing Beyond Domains in Cross-Domain Continual Learning

Christian Simon, Masoud Faraki, Yi-Hsuan Tsai, Xiang Yu, Samuel Schuster, [Yumin Suh](#), Mehrtash Harandi, Manmohan Chandraker

CVPR 2022

## Cross-Domain Similarity Learning for Face Recognition in Unseen Domain

Masoud Faraki, Xiang Yu, Yi-Hsuan Tsai, [Yumin Suh](#), Manmohan Chandraker

CVPR 2021

## Learning to Optimize Domain Specific Normalization for Domain Generalization

Seonguk Seo, [Yumin Suh](#), Dongwan Kim, Geeho Kim, Jongwoo Han, Bohyung Han

ECCV 2020

## Stochastic Class-based Hard Example Mining for Deep Metric Learning

[Yumin Suh](#), Bohyung Han, Wonsik Kim, Kyoung Mu Lee

CVPR 2019

## Part-Aligned Bilinear Representations for Person Re-identification

[Yumin Suh](#), Jingdong Wang, Siyu Tang, Tao Mei, Kyoung Mu Lee

ECCV 2018

## Appearance Dependent Inter-Part Relationship for Human Pose Estimation

[Yumin Suh](#) and Kyoung Mu Lee

APSIPA 2016

## Discrete Tabu Search for Graph Matching

Kamil Adamczewski, [Yumin Suh](#), Kyoung Mu Lee

ICCV 2015

## Subgraph Matching Using Compactness Prior For Robust Feature Correspondence

[Yumin Suh](#), Kamil Adamczewski, Kyoung Mu Lee

CVPR 2015

## Graph Matching via Sequential Monte Carlo

[Yumin Suh](#), Minsu Cho, Kyoung Mu Lee

ECCV 2012

## Honors and Awards

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### Business Contribution Award, NEC Laboratories America

2024

- NEC develops the technology to automatically generate explanatory text from video using video recognition AI x LLM, (December 2023)

### Business Contribution Award, NEC Laboratories America

2023

- Aiming to realize human digital twins: Image analysis technology that efficiently senses the real world, (August 2023)
- NEC develops high-speed, high-precision technology to search for specific persons based on ambiguous appearance attribute information by analyzing camera images (May 2023)

### Outstanding Reviewer, CVPR 2023

2023

### Outstanding Reviewer, ICML 2020

2023

### 3rd Place Award, VisDA-2019

2019

- *Visual Domain Adaptation Challenge, TASK-CV Workshop in ICCV 2019*  
with Dongwan Kim, Geeho Kim, Seonguk Seo, Bohyung Han, Taeho Lee, Jongwoo Han, Hyejeong Jeon

### Doctoral Colloquium, KCCV 2019

2019

<b>Doctoral Colloquium</b> , CVPR 2019	<b>2019</b>
<b>3rd Place Award</b> , SFMI Machine Learning Challenge 2017	<b>2017</b>
<ul style="list-style-type: none"> <li><i>Challenge on the road sign letter recognition from road view images</i>, Samsung Fire &amp; Marine Insurance, Korea with Jihong Kang and Sungyong Baik</li> </ul>	
<b>Graduated with honors (Summa cum laude)</b>	<b>2011</b>

## Invited Talks

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### Elastic AI: Adaptive Solution for Multi-Task AI Challenges

- Korea University Feb 2024

### Elastic AI for multiple tasks

- Company-wide talk May 2022
- [Lomin Inc.](#) Feburary 2022
- Guest lecture in “Moonshot project”, Korea University June 2022

### Multi-task learning and domain generalization

- Guest lecture in Australian National University October 2021

### Learning local matching for person re-identification

- Young Research Highlight, Summer Annual Conference of IEIE June 20219

## Academic Services

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### Area Chair

- CVPR (2025)
- CVPR (2024)
- ACCV (2022)

### Senior Program Committee

- AAAI (2022)
- IJCAI (2021)

### Program Committee

- AAAI (2025)
- ECCV, ICLR, ICML (2024)
- CVPR, ICCV, ICLR, ICML (2023)
- CVPR, ECCV, ICLR, ICML, IJCAI, NeurIPS (2022)
- AAAI, CVPR, ICCV, ICLR, ICML, NeurIPS, WACV (2021)
- AAAI, ACCV, CVPR, ECCV, ICPR, ICML (2020)
- CVPR, ICCV (2019)
- MM (2017)

### Journal Reviewer

- TPAMI, TIP, TMM, TCSVT, CVIU, MMSJ, AOAS

### Student volunteer

- ACCV 2012, MM 2018

## Mentoring

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<a href="#">Dohwan Ko</a> (Korea University)	2024
<a href="#">Youngmin Oh</a> (Yonsei University)	2023
<a href="#">Dongwan Kim</a> (Seoul National University)	2023
<a href="#">Abhishek Aich</a> (University of California, Riverside)	2022
<a href="#">Dripta Raychaudhuri</a> (University of California, Riverside)	2021
<a href="#">Weijian Deng</a> (Australian National University)	2020