Yegang Du

CONTACT INFORMATION

Mobile +81-90-9449-5636

Email duyegang@gmail.com

Address Room 407, Building No.26,

4-25-1 Wakabacho, Tachikawa, Tokyo. Japan 190-0001

EDUCATION

2015.10 - **Ph.D.**, *Information Science*, School of Information Science.

- 2020.03 Japan Advanced Institute of Science and Technology (JAIST), Japan

Advisor - **Prof. Yasuo Tan**

Research Area – *IoT and Smart Home*

2017.03- **Intership**, *School of Computer Science and Technology*.

-2017.08 Tianjin University, China

Advisor – Prof. Keqiu Li

Research Area – *Smart Library System*

2012.09- **M.S.**, *Computer Science*, Information Science and Technology College.

-2015.01 Dalian Maritime University, China

GPA – *3.49/4* (Top 3%)

Advisor – Prof. Wenyu Qu

Research Area – *Image Retrieval*

2008.09- **B.Eng.**, *Network Engineering*, Information Science and Technology College.

-2012.07 Dalian Maritime University, China

GPA – *3.46/4* (Top 10%)

Main Courses – *Data Structure, Communication Network, Computer Network, The Principle of TCP/IP Protocols, etc*

WORK EXPERIENCE

2022.05- **Junior Researcher**, *Future Robotics Organization*.

-Now Waseda University, Japan

Research - Social Robot for Elderly.

2021.05- **Lecturer**, *Navigation College*.

-2022.04 Dalian Maritime University, China

Research - Environmental Information Processing.

Visiting Researcher, *Big Data Integration Research Center*.

National Institute of Information and Communications Technology (NICT), Japan

2020.04–	**Fixed Term Researcher**, *Big Data Integration Research Center*.
-2021.03	National Institute of Information and Communications Technology (NICT), Japan
	Advisor - Dr. Koji Zettsu
	Research - Air Quality Index(AQI) Prediction with Federated Learning
2019.10–	**Research Fellow**, *Center for Trustworthy IoT Infrastructure*.
-2020.03	Japan Advanced Institute of Science and Technology (JAIST), Japan
	Advisor - Prof. Yasuo Tan
	Research - Implementation of Smart Home Framework based on ECHONET

RESEARCH PROJECTS

Waseda University

2022–Now   **EU-Japan Virtual Coach for Smart Aging**.

Supported by MIC JPJ000595

The overall objective of e-ViTA is to improve well-being in older adults in Europe and Japan, and thereby promote active and healthy ageing, contribute to independent living, and reduce risks of social exclusion of older adults.

National Institute of Information and Communications Technology

2020–2021   **Air Quality Index (AQI) prediction with Federated Learning**.

Build general federated learning framework to predict the AQI with monitor station data in Japan. The CRNN model is utilize to excavate the temporal and spatial variation of the AQI in different areas. Through federated learning framework, global CRNN model can be trained on the premise of protecting data privacy.

Japan Advanced Institute of Science and Technology

2018–2020   **Autonomous Operation Networks of IoT Area**.

Supported by CAO PRISM (JPY: 119M)

Survey of machine learning and deep learning algorithms for large scale sensing data. Prepare the hardware and software platform for testbed of smart IoT in agriculture. Propose practical approach to promote agriculture management using various sensors.

2015–2017   **Joint Research with Honda R&D Co., Ltd.**.

Supported by Honda R&D Co., Ltd.

Analise home activity of inhabitant with wireless sensing technology. Recognize human activity and provide specific service in real time. Make simulation on activities of daily living to predict future activity of inhabitant.

Tianjin University

2017   **The Basic theory and Key Technology of Software-defined Networks**.

Supported by NSFC 61432002 (CNY: 3.5M)

Propose a device-free method to record reader's activity in the library. The method utilizes RFID tags attached on each books in the bookshelf and the interaction between reader and books to real time monitor reader's activity.

Dalian Maritime University

2015–2016   **The Key Technology Research of Mobile Visual Retrieval**.

Supported by NSFC 61370199 (CNY: 760K)

Given a query image taken by mobile devices, MVS system extracts its visual descriptors firstly. Then, the descriptors are transmitted to the server after being compressed based on salience. Finally, the server gives the feedback of images similar with the query image.

PUBLICATIONS

International Journals

Qilong Jia, Yingwei Zhang, **Yegang Du**. "Model-Free Blue-Channel Transmission Estimation for Underwater Image Restoration", in IEEE Transactions on Circuits and Systems for Video Technology, 2022 (in progress)

Qilong Jia, Shuang Dong, Ying Li, **Yegang Du**. "Heterogeneous Neural Networks for Oil Spill Recognition Using Hyperspectral Data and Hyperspectral Images", in International Journal of Remote Sensing, 2022 (in progress)

Yegang Du, Yuto Lim, Yasuo Tan. "A Novel Human Activity Recognition and Prediction in Smart Home Based on Interaction", in MDPI Sensors, 2019

Yegang Du, Yuto Lim, Yasuo Tan. "Activity Recognition Using RFID Phase Profiling in Smart Library", in IEICE Transaction on Information and Systems, 2019

Yegang Du, Zhiyang Li, Milos Stojmenovic, Wenyu Qu, Heng Qi. "A Low Overhead Progressive Transmission for Visual Descriptor Based on Image Saliency", in Journal of Multiple-Valued Logic and Soft Computing, 2015

Siyang Miao, Zhiyang Li, Wenyu Qu, **Yegang Du**, Songhe Wang, Heng Qi. "Progressive Transmission Based on Wavelet Used in Mobile Visual Search", in Journal of Embedded Systems, 2014

International Conferences

Yegang Du, Kaiyuan Zhang, Gabriele Trovato. "Composite Emotion Recognition and Feedback of Social Assistive Robot for Elderly People", in proceedings of HCII, 2023 (accepted)

Yegang Du. "A Scheme for Sensor Data Reconstruction in Smart Home", in proceedings of NSS, 2021

Yegang Du, Yuto Lim, Yasuo Tan. "RF-ARP: RFID-based Activity Recognition and Prediction in Smart Home", in proceedings of IEEE ICPADS, 2019

Yegang Du, Yuto Lim, Yasuo Tan. "Activity Prediction Using LSTM in Smart Home", in proceedings of IEEE GCCE, 2019

Yegang Du, Yuto Lim, Yasuo Tan. "Reading Activity Recognition in Smart RF-Library", in proceedings of IEEE GCCE, 2018

Yegang Du, Yasuo Tan, Yuto Lim. "RF-Switch: A Novel Wireless Controller in Smart Home", in proceedings of IEEE ICCE-TW, 2018

Yegang Du, Zhiyang Li, Wenyu Qu, Siyang Miao, Songhe Wang, Heng Qi. "MVSS: Mobile Visual Search Based on Saliency", in proceedings of IEEE HPCC, 2013

Jun Wang, Zhiyang Li, **Yegang Du**, Wenyu Qu. "Stacked Product Quantization for Nearest Neighbor Search on Large Datasets", in proceedings of IEEE Trustcom/BigDataSE/ISPA, 2016

Qi Zhang, Zhiyang Li, **Yegang Du**, Wenyu Qu. "A Novel Multi-table Indexing in Mobile Visual Search", in proceedings of IEEE DASC, 2014

Songhe Wang, Zhiyang Li, Siyang Miao, **Yegang Du**, Wenyu Qu, Junjie Cao. "Strand Structures Detection for 2D Shapes Based on Visibility", in proceedings of ICGIP, 2013

Domestic Conferences

Yegang Du, Yuto Lim, Yasuo Tan. "Activity Prediction Using LSTM in Smart Home", in proceedings of IEICE General Conference, 2019

Yegang Du, Pham Van Cu, Yasuo Tan, Yuto Lim. "A Solution of Activity Recognition in Smart Home Using Passive RFID Tags", in proceedings of IEICE General Conference, 2018

TEACHING EXPERIENCE

2022-2023   Guest Lecture – *Introduction to Internet of Things*
2021-2022   Lecturer – *Wireless Sensor Networks*; *Specialized English for GIS*
2012-2014   Teaching Assistant – *Network and High Performance Computing*
2008-2012   Teaching Assistant – *Computer Science*

EXTRACURRICULAR SERVICE

Session Chair of Conferences – *ICPADS 2019*

Reviewer of Conferences – *ICPADS 2019*; *SmartIoT 2020*

Reviewer of Journals – *IEEE Network*; *IEEE Transactions on Computers*; *IEEE Journal on Selected Areas in Communications*; *IEEE Robotics and Automation Letters*; *Sensors*; *Electronics*; *Applied Sciences*

LANGUAGES

English – TOEIC-775, CET-6
Japanese – JLPT-N2
Chinese – Mother Tongue

CERTIFICATION AND LICENSE

Certification – Cisco Certified Network Associate(CCNA)
License – Chinese/Japanese Driver License

AWARDS

2021   Overseas High-Level Talents of Chinese Nationality
2016   China Scholarship Council(CSC) and JAIST Joint Scholarship
2015   Japan Monbukagakusho Honors Scholarship for Privately-Financed International Students
2015   JAIST Doctoral Research Fellow