Sayed Jobaer (简叶)

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Educational Background

Donghua University, Shanghai, China *2021 – 2025*
Ph.D. in Information and Communication Intelligent Systems
Dissertation: Effective Object Detection in UAV Imagery for Complex Environmental Applications
Grade: 85.57 (Average)

Donghua University, Shanghai, China *2018 – 2021*
M.Sc. in Information and Communication Technology
Thesis: UAV-Assisted Hybrid Scheme for Urban Road Safety Based on VANETs
Grade: 83.92 (Average)

Daffodil International University, Dhaka, Bangladesh *2011 – 2015*
B.Sc. in Electronic and Telecommunication Engineering
Project: Automation of Electronics Tax and VAT Collection
CGPA: 3.36 / 4.00

Research Profile

I am a computer vision researcher with strong expertise in object detection and aerial visual perception. My research focuses on developing efficient and robust visual representation learning methods for challenging real-world scenarios, including small-object detection, motion blur, low-light conditions, and complex 2D/3D environments. Recently, my work has expanded toward 3D scene understanding and diffusion-based generative models, with the goal of improving data efficiency, generalization, and robust perception for autonomous systems. *Future direction:* integrating generative and 3D representation learning to enable robust perception under limited supervision and data scarcity.

Research Interests

- Visual representation learning for robust perception in complex real-world environments
- 2D/3D object detection and scene understanding under limited data and adverse conditions
- Diffusion-based generative models for data augmentation, representation learning, and uncertainty modeling
- Aerial and embodied perception for autonomous and intelligent systems

Publications

1. **Sayed Jobaer**, X.-S. Tang, Y. Zhang. "A Deep Neural Network for Small Object Detection in Complex Environments with Unmanned Aerial Vehicle Imagery." **Engineering Applications of Artificial Intelligence**, 148, 110466 (2025). [**SCI, Q1, IF: 8.0**]
2. **Sayed Jobaer**, X.-S. Tang, Y. Zhang, et al. "A Novel Knowledge Distillation Framework for Enhancing Small Object Detection in Blurry Environments with Unmanned Aerial Vehicle-Assisted Images." **Complex & Intelligent Systems**, 11, 63 (2025). [**SCI, Q2, IF: 5.1**]
3. **Sayed Jobaer**, Y. Zhang, M. A. Iqbal Hussain, and F. Ahmed. "UAV-Assisted Hybrid Scheme for Urban Road Safety Based on VANETs." **Electronics**, 9(9), 1499 (2020). [**SCI, Q3, IF: 2.6**]
4. R. Shaha†, Y. Zhang, **Sayed Jobaer**†, et al. "YOLO-UAVNet: A Novel Deep Learning Network for Small Object Detection in Complex Environments Using UAV-Assisted Images." **Journal of Donghua University (English Edition)**, 43(6) (2026, in press). [**Scopus**]
5. M. D. A. Habib Tushar†, Y. Zhang, **Sayed Jobaer**†, et al. "YOLO-SKYNet: A Lightweight Deep Learning Framework with Novel Approaches for Small-Object Detection in UAV Imagery under Complex Environments." **Journal of Donghua University (English Edition)**, 44(5) (2027, in press). [**Scopus**]
6. Z. Cui, K. Deng, H. Zhang, Z. Zha, and **Sayed Jobaer**. "Deep Reinforcement Learning-Based Multi-Agent System with an Advanced Actor–Critic Framework for Complex Environments." **Mathematics**, 13(5), 754 (2025). [**SCI, Q4, IF: 2.2**]
7. E. U. Rahman, Y. Zhang, S. Ahmad, H. I. Ahmad, and **Sayed Jobaer**. "Autonomous Vision-Based Inspection of Porcelain Insulators in Primary Distribution Systems Using UAVs." **Sensors**, 21(3), 974 (2021). [**SCI, Q3, IF: 3.5**]

8. P. Roy, **Sayed Jobaer**, and N. Sultana. "Automation of Electronics Tax and VAT Collection." **International Journal on Advanced Science, Engineering and Information Technology**, 40(40), 70–77 (2015). [**Scopus**]

† These authors contributed equally to this work.

Conference

1. I. Jahid, A. A. M. Muzahid, **Sayed Jobaer**, N. N. Neha, H. Han, Y. Zhang, and F. Sohel. "DormGuardNet: A Lightweight Deep Learning Model for Detecting Prohibited Items in Student Dormitory Environments." In **Proceedings of the 17th International Conference on Computer and Automation Engineering (ICCAE 2025)**, Perth, Australia. [**EI Indexed**]
2. S. Ahmad, Q. Jie, R. Abdul, E. U. Rahman, **Sayed Jobaer**, A. B. Mohsin, R. Abdur, and U. D. Sami. "Terminal Sliding Mode Control Scheme for Current Control of Five-Phase Induction Motors." In **Proceedings of the 3rd International Conference on Power and Energy Applications (ICPEA 2020)**, Busan, Korea. [**EI Indexed**]

Academic Experience

Ph.D. Researcher *2021 – 2025*
Donghua University, Shanghai, China

- Led independent doctoral research on visual perception in UAV imagery, addressing challenges related to small objects, motion blur, and complex backgrounds.
- Proposed novel architectural designs and feature fusion strategies to improve robustness and efficiency of object detection models.
- Conducted systematic ablation studies and failure analysis to understand model behavior and generalization limits.
- Extended research toward 3D visual representations and diffusion-based generative models for improved data efficiency and robustness.
- Authored and revised peer-reviewed journal and conference publications as first and co-author.

M.Sc. Researcher *2018 – 2021*
Donghua University, Shanghai, China

- Conducted research on UAV-assisted intelligent transportation systems and VANET-based urban road safety.
- Designed and evaluated simulation-based communication models under diverse network conditions.
- Authored a master's thesis under academic supervision.

Teaching and Academic Service

- Assisted undergraduate laboratory courses in signal processing and communication systems.
- Mentored junior students on research methodology, experimental design, and thesis preparation.
- Supported undergraduate and postgraduate course projects involving Python and MATLAB.
- Served as a peer reviewer for international journals and conferences in Computer Vision and Artificial Intelligence.

Technical Skills

- **Core Expertise:** Computer Vision, Deep Learning, Object Detection, Visual Representation Learning
- **3D Vision:** 3D Object Detection, Point Cloud Processing, Multi-View Geometry, Depth Estimation
- **Generative Models:** Diffusion Models (DDPM), Latent Diffusion, Score-Based Generative Modeling
- **Modeling Methods:** CNNs, Vision Transformers, Attention Mechanisms, Feature Fusion, Knowledge Distillation
- **Frameworks & Tools:** PyTorch, TensorFlow, OpenCV, NumPy, CUDA, Linux, Git

Technical Contributions

- **Pepper-4D**: 4D plant point cloud dataset (916 point clouds)
- **SOD-Dataset**: Nine-class small-object UAV imagery dataset (3000+ images).
- **PISD**: Dormitory prohibited-item image dataset (800+ images).

Awards and Scholarships

- Excellent International Graduate, Donghua University (2025)
- Outstanding International Student Scholarship Award, Donghua University (2024)
- Excellent Social Work Award, Donghua University (2021)
- Shanghai Government Scholarship (SGS), China (2021–2025)
- China Scholarship Council (CSC) Scholarship (2018–2021)

References

Assoc. Prof. Xue-song Tang — Ph.D. Supervisor, Donghua University
`tangxs@dhu.edu.cn`

Prof. Yihong Zhang — Vice Dean, Donghua University
`zhangyh@dhu.edu.cn`

Prof. LU Weibing — Vice President, Donghua University
`wblu@dhu.edu.cn`