Yao Rong

CONTACT INFORMATION

Technical University of Munich
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EDUCATION

Technical University of Munich, Germany, 2019.09 – present
- Ph.D. candidate at TUM School of Computation, Information and Technology
- Adviser: Prof.Dr. Enkelejda Kasneci
- Area of Study: Human-Centered Technologies for Learning

Technical University of Munich, Germany, 2016.10 – 2019.06
- M.S., Electrical and Computer Engineering
- Thesis Topic: *Real-time Hand Gesture Recognition based on a ToF Camera*
- Area of Study: Human-Machine Communication
- GPA: 3.8 (German GPA: 1.3)

Tongji University, China & Munich University of Applied Sciences, Germany
2012.09 – 2016.09
- B.Eng., Mechatronics *(Dual degree program)*
- Thesis Topic: *Real-time Hand Gesture Detection and Tracking with OpenCV Library on Android Devices*

RESEARCH INTERESTS

My research interest lies at the intersection of AI systems and human interaction with a specific focus on **human-centered Explainable AI (XAI)**, **human-centered AI**, and **deep learning**. I am particularly focusing on how XAI techniques can enhance the understanding, trust, and usability of AI systems for end-users. By incorporating user feedback, human cognitive models, and effective model explanation techniques, my aim is to bridge the gap between complex AI algorithms and human interpretability, ultimately fostering **responsible and transparent AI** deployment in various domains.

RESEARCH PUBLICATIONS

[1] **Rong, Y.**, Wang, G., Feng, Q., Liu, N., Liu, Z., Kasneci, E., Hu, X. (2023)
Efficient GNN Explanation via Learning Removal-based Attribution
under review

[2] **Rong, Y.**, Özdel, S., Albaba, BM., Kuo, YL., Wang X., Kasneci, E. (2023)
Gaze-Guided Graph Neural Network for Action Anticipation Conditioned on Intention
under review

[3] **Rong, Y.***, Wei, X.*, Lin, T., Wang, Y., Kasneci, E. (2023)
DynStatF: An Efficient Feature Fusion Strategy for LiDAR 3D Object Detection
In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*

[4] Leemann, T.*, Kirchhof M.*, **Rong, Y**, Kasneci E., Kasneci, G. (2023)
When are Post-hoc Conceptual Explanations Identifiable?
In *Proceedings of The 39th Conference on Uncertainty in Artificial Intelligence (UAI).*

[5] **Rong, Y.**, Leemann, T., Nguyen, T., Fiedler, L., Qian, P., Unhelkar, V., Seidel, T., Kasneci, G.,& Kasneci, E. (2022)
Towards Human-centered Explainable AI: User Studies for Model Explanations
under review

[6] **Rong, Y.***, Leemann, T.*, Borisov, V., Kaneci, G., & Kasneci, E. (2022)
Evaluating feature attribution: An information-theoretic perspective
In *Proceedings of the 39th International Conference on Machine Learning (ICML)*

[7] **Rong, Y.**, Kassautzki, N.-R., Fuhl, W., & Kasneci, E. (2022)
Where and what: Driver attention-based object detection
In *Proceedings of the ACM on Human-Computer Interaction (PACMHCI)*

[8] **Rong, Y.**, Castner, N., Bozkir, E., & Kasneci, E. (2022)
User Trust on an Explainable AI-based Medical Diagnosis Support System
TRAIT at Conference on Human Factors in Computing Systems (CHI-TRAIT)

[9] **Rong, Y.**, Xu, W., Akata, Z., & Kasneci, E. (2021)
Human attention in fine-grained classification
In *2021 British Machine Vision Conference (BMVC)*

[10] **Rong, Y.**, Han, C., Hellert, C., Loyal, A., & Kasneci, E. (2021)
Artificial intelligence methods in in-cabin use cases: A survey
IEEE Intelligent Transportation Systems Magazine (ITSM)

[11] **Rong, Y.**, Akata, Z., & Kasneci, E. (2020)
Driver intention anticipation based on in-cabin and driving scene monitoring
In *2020 IEEE 23rd International Conference on Intelligent Transportation Systems (ITSC)*

[12] Köpüklü, O., Ledwon, T., **Rong,Y.**, Kose, N., & Rigoll, G. (2020)
Drivermhg: A multi-modal dataset for dynamic recognition of driver micro hand gestures and areal-time recognition framework.
In *2020 15th IEEE International Conference on Automatic Face and Gesture Recognition (FG)*.

[13] Fuhl, W., **Rong,Y.**, Motz, T., Scheidt, M., Hartel, A., Koch, A., & Kasneci, E. (2020)
Explainable online validation of machine learning models for practical applications
In *2020 25th International Conference on Pattern Recognition (ICPR)*

[14] Fuhl, W., **Rong,Y.**, & Kasneci, E. (2020)
Fully convolutional neural networks for raw eye tracking data segmentation, generation, and reconstruction.
In *2020 25th International Conference on Pattern Recognition (ICPR)*

[15] Köpüklü, O., **Rong,Y.**, & Rigoll, G. (2019)
Talking with your hands: Scaling hand gestures and recognition with CNNs.
In *Proceedings of the IEEE/CVF International Conference on Computer Vision Workshops (ICCVW)*

Research Experience

Doctoral Researcher, 2023.04 - present
- Enhancing Model Interpretability and Competence Through Human Knowledge Integration
- at the research group HCTL (Human-Centered Technologies for Learning), TU Munich
- Adviser: Prof.Dr. Enkelejda Kasneci

Joint Research Project, 2023.02 - present
- Explaining Image Classification Models by Estimating Expertise of Users
- with the research group HCAIR (Human-Centered AI and Robotics), Rice University
- Adviser: Dr. Vaibhav Unhelkar

Visiting Scholar, 2022.09 - 2023.03
- at D2K Lab, Rice University; Adviser: Dr. Xia Hu
- Efficient Graph Neural Network Explanation Generation

Doctoral Researcher, 2019.09 - 2023.03
- Human Attention in Computer Vision Applications
- at the research group HCI (Human-Computer Interaction), University of Tübingen
- Adviser: Prof.Dr. Enkelejda Kasneci

Joint Research Project, 2020.09 - 2021.06
- Human Attention in Fine-grained Classification Tasks
- with the research group EML (Explanable Machine Learning), University of Tübingen
- Adviser: Prof.Dr. Zeynep Akata

Research Project, 2019
- Channel Multiplexing Module Design
- at the research group Integrated Systems, TU Munich

Research Project, 2018
- Gait Recognition Using a Neural Network Autoencoder
- at the research group Human-Machine Communication, TU Munich

Teaching Experience

Teaching Assistant & Guest Lecturer

- Master course on *Human-AI Interaction*, TU Munich, 2023
- Master course on *Human-AI Interaction*, University of Tübingen, 2022
- Master seminar on *Advanced Topics in Human-Computer Interaction*, University of Tübingen, 2021
- Bachelor seminar on *Introductory Topics in Human-Computer Interaction*, University of Tübingen, 2020
- Master course on *Multimodal Human-Computer Interaction*, University of Tübingen, 2020
- Master course on *SystemC*, TU Munich, 2018

Selected Mentorship

- Young Academia Project at TU Munich, Team *Tick Talker*, ongoing
- Isabel Schorr, Mira Trouvain, Master students at TU Munich. Interdisciplinary project *Simulating Human-centered User Experience in XAI using LLMs*, ongoing
- Mohammed Abbas Ansari, Undergraduate student at Jamia Millia Islamia, India. *ASD classification based on visual scanpath using LLMs*, 2023
- Thai Trang Nguyen, Master student at University of Tübingen. *Model Faithfulness and Preconceptions in Subjective Ratings of Explanations*, 2023
- Jacqueline Hirch, Master student at University of Tübingen. *Improving Interactive Medical Support System Performance with Knowledge Distillation*, 2022
- Naemi Rebecca Kassautzki, Master student at University of Tübingen. *Driver Attention-based Object Detection*, 2022
- David Scheerer, Master student at University of Tübingen. *Faithful Attention Explanation: Verbalizing Classification Decisions Based on Model Explanation*, 2021

Professional Service

Conference Organizing Committee
- Diversity & Inclusion Chair at ACM Symposium on Eye Tracking Research and Applications (ETRA) 2023
- Diversity & Inclusion Chair at ACM Symposium on Eye Tracking Research and Applications (ETRA) 2022

Student Advisory Service
- at the Department of Computer Science, University of Tübingen, 2020 – 2022

Reviewer
- at ICML, NeurIPS, AISTATS, TNNLS, WACV, ACM MM, etc.

Honors, Awards & Grants

Travel grant from Cluster of Excellence - Machine Learning, Tübingen, 2022

Master study *passed with distinction*, TU Munich, 2019

First Prize of the College-students Design Competition of Electrical System, DELPHI Technologies, China, 2015

Student Scholarships awarded by Tongji University, China, 2013-2015

Skills

Languages

- English (fluent), German (fluent), Chinese (native)

Programming Languages

- Python, C, C++, Java, Matlab

Tools & Libraries

- Pytorch, Tensorflow, TeX, OpenCV, JFace, SWT, Verilog, etc.

References

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Xia Hu, Associate Professor
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