Yao Rong

CONTACT INFORMATION

Technical University of Munich (TUM)
Chair for Human-Centered Technologies for Learning
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EDUCATION

Technical University of Munich, Germany, Apr. 2023 – present
- Ph.D. Candidate, TUM School of Computation, Information and Technology
- Advisor: Prof. Dr. Enkelejda Kasneci
- Area of Study: Human-Centered Technologies for Learning

University of Tübingen, Germany, Sep. 2019 – Mar. 2023
- Ph.D. Candidate, Computer Science Department (*Transferred to TUM*)
- Advisor: Prof. Dr. Enkelejda Kasneci
- Area of Study: Human-Computer Interaction

Technical University of Munich, Germany, Oct. 2016 – Jun. 2019
- M.S., Electrical and Computer Engineering
- Thesis Topic: *Real-time Hand Gesture Recognition based on a ToF Camera*
- Area of Study: Automation and Robotics

Tongji University, China & Munich University of Applied Sciences, Germany, Sep. 2012 – Sep. 2016
- 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 interests lie in building **human-centered AI** models that can capture human intelligence, understand human needs, and provide explanations. I focus on utilizing explainable AI (XAI) techniques to augment the interpretability, trustworthiness, and user-friendliness of AI systems for end-users. My overarching research goal is to design models that facilitate efficient and safe **human-AI collaboration**.

RESEARCH PUBLICATIONS

[1] **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*

[2] 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).*

[3] **Rong, Y.***, Leemann, T.*, Borisov, V., Kaneci, G., & Kasneci, E. (2022)
A Consistent and Efficient Evaluation Strategy for Attribution Methods
In *Proceedings of the 39th International Conference on Machine Learning (ICML)*

[4] **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)*

[5] **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)

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

[7] **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)

[8] **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)*

[9] 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)*.

[10] 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)*

[11] 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)*

[12] 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)*

Preprints & Under Review

[13] **Rong, Y.**, Leemann, T., Nguyen, T., Fiedler, L., Qian, P., Unhelkar, V., Seidel, T., Kasneci, G.,& Kasneci, E. (2023)
Towards Human-centered Explainable AI: User Studies for Model Explanations
under minor revision of the IEEE Transaction on Pattern Analysis and Machine Intelligence (TPAMI)

[14] **Rong, Y.**, Qian, P., Unhelkar, V., Kasneci, E. (2023)
I-CEE: Tailoring Explanations of Image Classifications Models to User Expertise
under review

[15] **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

[16] Leemann, T.*, **Rong, Y.***, Nguyen, T., Kasneci, E., & Kasneci, G. (2023)
Does My Explanation Win Your Trust Or Is It Something Else? Unveiling Confounding Factors on Trust in XAI
under review

Research Experience

Doctoral Researcher, Apr. 2023 – present
- Enhancing Model Interpretability and Competence Through Human Knowledge Integration, HCTL (Human-Centered Technologies for Learning) Research Group, TU Munich
- Advisor: Prof. Dr. Enkelejda Kasneci

Joint Research Project, Feb. 2023 – present
- Explaining Image Classification Models by Estimating Expertise of Users, HCAIR (Human-Centered AI and Robotics) Research Group, Rice University
- Advisor: Dr. Vaibhav Unhelkar

Visiting Scholar, Sep. 2022 – Mar. 2023
- Efficient Graph Neural Network Explanation Generation, D2K Lab, Rice University
- Advisor: Dr. Xia Hu

Doctoral Researcher, Sep. 2019 – Mar. 2023
- Human Attention in Computer Vision Applications, HCI (Human-Computer Interaction) Research Group, University of Tübingen
- Advisor: Prof. Dr. Enkelejda Kasneci

Joint Research Project, Sep. 2020 – Jun. 2021
- Human Attention in Fine-grained Classification Tasks, EML (Explanable Machine Learning) Research Group, University of Tübingen
- Advisor: Prof. Dr. Zeynep Akata

Research Project, 2019
- Channel Multiplexing Module Design, Integrated Systems Research Group, TU Munich

Research Project, 2018
- Gait Recognition using a Neural Network Autoencoder, Human-Machine Communication Research Group, TU Munich

Teaching Experience

Teaching Assistant & Guest Lecturer

- Bachelor course on *Technology and Society*, TU Munich, 2023
- 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. *Simulating Human-centered User Experience in XAI using LLMs*, ongoing
- Mohammed Abbas Ansari, Undergraduate student at Jamia Millia Islamia, India. *Semi-supervised Learning Techniques for Scanpath prediction*, ongoing
- 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 & Accessibility Chair at ACM Symposium on Eye Tracking Research & Applications (ETRA) 2024
- 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

- Department of Computer Science, University of Tübingen, 2020 – 2022

Reviewer

- Conferences: ICML, NeurIPS, ICLR, AISTATS, WACV, ACM MM, CHI
- Journals: TNNLS, T-IV

Honors, Awards & Grants

TUM Seed Fund for the coordination of EU projects, Munich, 2023

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

Master study *passed with distinction*, Technical University of 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

References

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