Riqiang Gao, Ph.D. candidate

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Research Interest

2015–now I am broadly interested in artifical intelligence, especially its applications in healthcare. I have focused on face recognition during the master period in Tsinghua. I'm exploring lung cancer risk estimation with imperfect longitudinal multi-modal data in Vanderbilt, advised by Prof. Bennett Landman.

Education

Degree	Major	University	Period	GPA rank
B.E.	Communication Eng.	Central South University	09/2011 - 07/2015	2 / 163
M.E.	Electronics Eng.	Tsinghua University	09/2015 - 07/2018	2 / 54
Ph.D.	Computer Sci.	Vanderbilt University	08/2018 - 05/2022 (expected)	N/A

Selected Honors & Awards

- 2021 C.F. Chen best paper award, Vanderbilt University (first-author) (< 2%)
- RFW Best Student Paper Award Finalist, SPIE-MI 2021 (first-author) (< 2%)
- 2020 RFW Best Student Paper Award Finalist, SPIE-MI 2020 (first-author) (< 2%)
- Honorable Mention Poster Award, SPIE-MI 2020 (Mentor & Presenter) (< 5%)
- 2015 Member of Outstanding Deeds Report (10 selected across all majors,< 0.5%)
- Outstanding Graduate in Hunan Province, China (2%)
- 2014 Meritorious in Mathematical Contest in Modeling of USA (team-leader) (10%)
- Pacemaker to Merit Student of CSU (30 selected across all majors, < 0.5%)
- 2013 First Prize in National Mathematics Competitions (not-math-major) of China (Rank 17 in China, Rank 1 in Hunan Province, <0.02%)
- 2012 – now Scholarships including Outstanding Scholarship (CSU, <1%), National Scholarship (CSU, < 2%), First Prize Scholarship (THU, 10%), University Graduate Fellowship (VU).

Research Experiences

- 09/2015 – 06/2018 Research Assistant, *Face Recognition*, Tsinghua University
- 06/2017 – 09/2017 Research Internship, *Clothes Detection*, YouTu X-Lab of Tencent
- 03/2018 – 06/2018 Research Internship, *Whole Slide Image Analysis*, Imsight Technology
- 05/2021 – Now Research Internship, *Anomaly Detection in Healthcare*, Siemens Healthineers
- 08/2018 – Now Research Assistant, *Lung Cancer Risk Estimation*, Vanderbilt University

Accepted/In Press Publications (Contact Author *)

Journal Articles

1. **Gao, Riqiang**, Huo, Y., Bao, S., Tang, Y., Antic, S. L., Epstein, E. S., Deppen, S., Paulson, A. B., Sandler, K. L., Massion, P. P., & Landman, B. A. (2020). Multi-path xd recurrent neural networks for collaborative image classification. *Neurocomputing*.
2. **Gao, Riqiang**, Tang, Y., Xu, K., Huo, Y., Bao, S., Antic, S. L., Epstein, E. S., Deppen, S., Paulson, A. B., Sandler, K. L., & Landman, B. A. (2020). Time-distanced gates in long short-term memory networks. *Medical Image Analysis* ***(C.F. Chen best paper (VU))***.
3. **Gao, Riqiang**, Yang, F., Yang, W., & Liao, Q. (2018). Margin loss: Making faces more separable. *IEEE Signal Processing Letters*, *25*(2), 308–312.
4. Yang, F., Yang, W., **Gao, Riqiang**, & Liao, Q. (2017). Discriminative multidimensional scaling for low-resolution face recognition. *IEEE Signal Processing Letters*, *25*(3), 388–392.
5. Yang, W., **Gao, Riqiang ***, & Liao, Q. (2017). Weighted voting of discriminative regions for face recognition. *IEICE TRANSACTIONS on Information and Systems*, *100*(11), 2734–2737.
6. Tang, Y., **Gao, Riqiang**, Han, S., Chen, Y., Gao, D., Nath, V., Bermudez, C., Savona, M. R., Abramson, R. G., Bao, I., Shunxing Lyu, Huo, Y., & Landman, B. A. (2020a). High-resolution 3d abdominal segmentation with random patch network fusion. *Medical Image Analysis*.

Conference Proceedings

1. **Gao, Riqiang**, Tang, Y. e. a., & Landman, B. A. (2021). Lung cancer risk estimation with incomplete data: A joint missing imputation perspective, In *Medical imaging: Image processing*. MICCAI **(early accepted)**.
2. **Gao, Riqiang**, Tang, Y., Xu, K., Kammer, M. N., Antic, S. L., Deppen, S., Sandler, K. L., Massion, P. P., Huo, Y., & Landman, B. A. (2021). Deep multi-path network integrating incomplete biomarker and chest ct data for evaluating lung cancer risk, In *Medical imaging: Image processing*. SPIE **(RFW all-conference best paper finalist)**.
3. **Gao, Riqiang**, Li, L., Tang, Y., Antic, S. L., Paulson, A. B., Huo, Y., Sandler, K. L., Massion, P. P., & Landman, B. A. (2020). Deep multi-task prediction of lung cancer and cancer-free progression from censored heterogenous clinical imaging, In *Medical imaging: Image processing*. SPIE **(RFW all-conference best paper finalist)**.
4. Yang, Y., **Gao, Riqiang ***, Tang, Y., Antic, S. L., Deppen, S., Huo, Y., Sandler, K. L., Massion, P. P., & Landman, B. A. (2020). Internal-transfer weighting of multi-task learning for lung cancer detection, In *Medical imaging: Image processing*. SPIE **(Honorable Mentioned Poster, * denotes Mentor)**.
5. **Gao, Riqiang**, Huo, Y., Bao, S., Tang, Y., Antic, S. L., Epstein, E. S., Balar, A. B., Deppen, S., Paulson, A. B., Sandler, K. L. Et al. (2019). Distanced lstm: Time-distanced gates in long short-term memory models for lung cancer detection. MICCAI-MLMI **(oral)**.
6. **Gao, Riqiang**, Yang, W., Hu, X., & Liao, Q. (2016). Two-stage patch-based sparse multi-value descriptor for face recognition, In *Visual communications and image processing (vcip)*, IEEE.
7. Yang, W., **Gao, Riqiang ***, Xu, Y., Sun, X., & Liao, Q. (2016). Discriminative patch-based sparse representation for face recognition, In *2016 ieee international conference on signal processing, communications and computing (icspcc)*. IEEE.
8. **Gao, Riqiang**, Yang, W., Sun, X., Li, H., & Liao, Q. (2015). Locally collaborative representation in similar subspace for face recognition, In *Chinese conference on biometric recognition*. Springer.

Mentored Undergraduates

01/2019 - 06/2019 Yiyuan Yang. First Job: Engineer in Facebook.

Mentored Undergraduates (continued)

07/2019 - 09/2019 Lingfeng Li. First Job: MS student in Northwestern University.

08/2019 - 12/2019 Xinmeng Zhang. First Job: Ph.D. student in Vanderbilt University.

References

Bennett Landman (Ph.D.) bennett.landman@vanderbilt.edu, Full Professor of EECS, Vanderbilt University, https://my.vanderbilt.edu/masi/people/bennett-landman-ph-d

Thomas Lasko (M.D., Ph.D.) tom.lasko@vumc.org, Assoicate Professor of Biomedical Informatics, Vanderbilt University Medical Center, https://www.vumc.org/dbmi/person/thomas-lasko-md-phd

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