Riqiang Gao, Ph.D. student

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Research Interest

2015–now I am broadly interested in machine learning and computer vision, with a focus on medical imaging recently. I have focused on face recognition during 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 Engineering	Central South University	09/2011 – 07/2015	90.5 (2 / 163)
M.E.	Electronics Engineering	Tsinghua University	09/2015 – 07/2018	3.6 (2 / 54)
Ph.D.	Computer Science	Vanderbilt University	08/2018 – Now	3.8 (N/A)

Selected Honors & Awards

2013 First Prize in National Mathematics Competitions (not-math-major) of China (Rank 17 in China, Rank 1 in Hunan Province, **most prestigious,** <**0.02%**)

2014 Meritorious in Mathematical Contest in Modeling of USA (team-leader) (10%)

Pacemaker to Merit Student of CSU (30 selected university-wide, **prestigious,** < **0.5%**)

2015 Member of Outstanding Deeds Report (10 selected university-wide, **prestigious, 0.1%**)

Outstanding Graduate in Hunan Province, China (2%)

2020 RFW Best Student Paper Award Finalist, SPIE-MI (first-author) (**prestigious**, < 2%)

Honorable Mention Poster Award, SPIE-MI (Mentor & Presenter) (< 5%)

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

08/2018 – Now Research Assistant, *Lung Cancer Risk Estimation*, Vanderbilt University

Research 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. Et al. (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. Et al. (2020). Time-distanced gates in long short-term memory networks. *Medical Image Analysis*.

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.

Conference Proceedings

1. **Gao, Riqiang**, Tang, Y., Xu, K., Huo, Y., Sandler, K. L., Massion, P. P., Blume, J. D., Lasko, T. A., & Landman, B. A. (2021). Characterizing imputation for lung cancer risk estimation with image and non-image data. Under Review.

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 **(oral)**.

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 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. Wang, J., **Gao, Riqiang**, Huo, Y., Bao, S., Xiong, Y., Antic, S. L., Osterman, T. J., Massion, P. P., & Landman, B. A. (2019). Lung cancer detection using co-learning from chest ct images and clinical demographics, In *Medical imaging 2019: Image processing*. SPIE.

7. **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.

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, Vanderbilt Undergraduate, now in Facebook.
07/2019 - 09/2019	Lingfeng Li, Vanderbilt Undergraduate.
08/2019 - 12/2019	Xinmeng Zhang, Vanderbilt Undergraduate.