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# Professor Dacheng Tao

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## **Biographical details**

Dacheng Tao is Professor of Computer Science and ARC Laureate Fellow in the School of Computer Science and the Faculty of Engineering, and the Inaugural Director of the UBTECH Sydney Artificial Intelligence Centre, at The University of Sydney. His research results in artificial intelligence have expounded in one monograph and 200+ publications at prestigious journals and prominent conferences, such as IEEE TPAMI, IJCV, AIJ, AAAI, IJCAI, NeurIPS, ICML, CVPR, ICCV, ECCV, ICDM, and KDD, with several best paper awards. He received the 2018 IEEE ICDM Research Contributions Award and the 2015 Australian Museum Scopus-Eureka prize. He is a Fellow of the IEEE, ACM, AAAS and the Australian Academy of Science.

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## **Research interests**

His research interests spread across subareas in artificial intelligence (AI), including computer vision, data science, deep learning, image processing, machine learning, medical informatics, social media, and video surveillance.

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## **Associations**

He is a Fellow of the Association for Computing Machinery (FACM), the Institute of Electrical and Electronics Engineers (FIEEE), the American Association for the Advancement of Science (FAAAS), the International Association of Pattern Recognition (FIAPR), the Optical Society of America (FOSA), and the International Society for Optical Engineering (FSPIE).

He is a foreign member of the Academia Europaea (Academy of Europe, MAE) and a Fellow of the Australian Academy of Science (FAA).

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## **Awards and honours**

Highly-cited researcher in Engineering (since 2014) and Computer Science (since 2015)

June 2020, IEEE TCSC (IEEE Computer Society Technical Committee on Scalable Computing) Most Influential Paper Award for "Tianyi Zhou, Dacheng Tao: GoDec: Randomized Lowrank & Sparse Matrix Decomposition in Noisy Case. ICML 2011: 33-40".

June 2019, Diploma of The Polish Neural Network Society, Zakopane, Poland

November 2018, IEEE ICDM Research Contributions Award for outstanding research contributions to the data mining field, Singapore, November 17-20, 2018.

July 2018, the IJCAI 2018 Distinguished Paper Award for "R-SVM+: Robust Learning with Privileged Information" at the International Joint Conference on Artificial Intelligence (IJCAI), Stockholm, Sweden, July 13-19, 2018.

March 2018, "Evolutionary Generative Adversarial Networks" was selected by MIT Technology Review as one of "The Best of the Physics arXiv".

October 2017, Andrew P. Sage Best Transactions Paper Award for "Learning to Ranking using User Clicks and Visual Features for Image Retrieval, IEEE Transactions on Cybernetics, vol. 45, no. 4, pp. 767-779, April 2015".

July 2017, co-recipient as the mentor of the student authors for the Distinguished Student Paper Award for "Tag Disentangled Generative Adversarial Network for Object Image Re-rendering" at the International Joint Conference on Artificial Intelligence (IJCAI), Melbourne, Australia, July 11-15, 2017.

March 2017, the IEEE Signal Processing Society Best Paper Award for "Click Prediction for Web Image Reranking Using Multimodal Sparse Coding. IEEE Transactions on Image Processing, vol. 23, no. 5, pp. 2019-2032, May 2014."

November 2015, ACS Digital Disruptors Award – ICT researcher of the year, Gold Disruptor 2015

October 2015, the UTS Vice-Chancellor's Medal for Exceptional Research

July 2015, the Australian Museum Scopus Eureka Prize

December 2014, The ICDM 10 Year Highest Impact Paper Award for "Supervised Tensor Learning", at the IEEE International Conference on Data Mining (ICDM), December 14-17, Shenzhen, Guangdong, China.

December 2013, co-recipient as the mentor of the student authors for the Best Student Paper Award for "Divide-and-Conquer Anchoring for Near-separable Nonnegative Matrix Factorization and Completion in High Dimensions" at the IEEE International Conference on Data Mining (ICDM), December 7-10, 2013, Dallas, Texas, US.

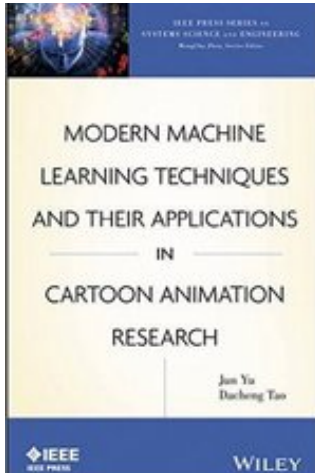
October 2007, Best Theory/Algorithm Paper Runner Up Award for "General Averaged Divergence Analysis" at the IEEE International Conference on Data Mining, October 28-31, 2007, Omaha, Nebraska, USA.

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## **Current research students**

Project title	Research student
Deep Learning for pose estimation and Loop Closure in 2D Laser SLAM	<a href="http://sydney.edu.au/engineering/people/qian.cheng.589.php">Qian CHENG</a> <a href="http://sydney.edu.au/engineering/people/qian.cheng.589.php">[http://sydney.edu.au/engineering/people/qian.cheng.589.php]</a>
Neural Machine Translation with Fully Information Transformation	<a href="http://sydney.edu.au/engineering/people/liang.ding.643.php">Liang DING</a> <a href="http://sydney.edu.au/engineering/people/liang.ding.643.php">[http://sydney.edu.au/engineering/people/liang.ding.643.php]</a>
Correcting Label Shift by Label Transformation Framework	<a href="http://sydney.edu.au/engineering/people/jiaxian.guo.481.php">Jiaxian GUO</a> <a href="http://sydney.edu.au/engineering/people/jiaxian.guo.481.php">[http://sydney.edu.au/engineering/people/jiaxian.guo.481.php]</a>
Machine Learning Theory and Application	<a href="http://sydney.edu.au/engineering/people/shiye.lei.462.php">Shiye LEI</a> <a href="http://sydney.edu.au/engineering/people/shiye.lei.462.php">[http://sydney.edu.au/engineering/people/shiye.lei.462.php]</a>
Semi-supervised Single Image 3D Reconstruction	<a href="http://sydney.edu.au/engineering/people/jizhizi.li.593.php">Jizhizi LI</a> <a href="http://sydney.edu.au/engineering/people/jizhizi.li.593.php">[http://sydney.edu.au/engineering/people/jizhizi.li.593.php]</a>
Vision-based grasping robot	<a href="http://sydney.edu.au/engineering/people/qixiang.ma.642.php">Qixiang MA</a> <a href="http://sydney.edu.au/engineering/people/qixiang.ma.642.php">[http://sydney.edu.au/engineering/people/qixiang.ma.642.php]</a>
Deep Streaming Label Learning for Modeling Emerging New Labels	<a href="http://sydney.edu.au/engineering/people/zhen.wang.731.php">Zhen WANG</a> <a href="http://sydney.edu.au/engineering/people/zhen.wang.731.php">[http://sydney.edu.au/engineering/people/zhen.wang.731.php]</a>

## Selected publications



[Modern Machine Learning  
Techniques and Their  
Applications in Cartoon  
Animation Research](#)

(John Wiley & Sons, 2013)

## Publications

Download citations: [PDF \[https://www.sydney.edu.au/law/about/people/publications/dacheng.tao.pdf\]](https://www.sydney.edu.au/law/about/people/publications/dacheng.tao.pdf); [RTF \[https://www.sydney.edu.au/law/about/people/publications/dacheng.tao.rtf\]](https://www.sydney.edu.au/law/about/people/publications/dacheng.tao.rtf); [Endnote \[https://www.sydney.edu.au/law/about/people/publications/dacheng.tao.txt\]](https://www.sydney.edu.au/law/about/people/publications/dacheng.tao.txt)

## Selected Grants

### 2020

- *Whopping Volta GPU Cluster Transforming Artificial Intelligence Research*, Tao D, Vucetic B, Kotagiri R, Nebot E, Lin X, Gao Y, Bennamoun M, Buyya R, Baldwin T, Williams S, Yuan J, Pagnucco M, Australian Research Council (ARC)/Linkage Infrastructure, Equipment and Facilities (LIEF)

### 2019

- *ARC Research Hub for Driving Farming Productivity and Disease Prevention*, Tao D, Australian Research Council (ARC)/Industrial Transformation Research Hubs (ITRH)
- *ARC Training Centre for Data Analytics for Resources and Environments DARE*, Cripps S, Marshall L, Ramos F, Wardle G, Tao D, Girolami M, Kohn R, Cripps E, Lindsay M, Oppermann I, Webster J, Korbel M, Salles T, Tanaka E, Scalzo R, Johnson F, Gosling J,

Chandra R, Greenville A, Hirst V, Vervoort R, Bell J, Black J, Jessell M, Czarnota A, Azizi L, Gibson L, Symington N, Dupen P, Gallagher M, Australian Research Council (ARC)/Industrial Transformation Training Centres (ITTC)

- CASSIE: A Biped Robot For Research in Locomotion and Perception, Tao D, Manchester I, DVC Research/Equipment Grant
- NVIDIA Medical Imaging Computational and AI platform, Calamante F, Tao D, Barnett M, National Health and Medical Research Council (NHMRC)/Equipment Grant

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## In the media

**AI expert awarded one of America's highest science honours** [<https://sydney.edu.au/news-opinion/news/2017/11/21/ai-expert-awarded-one-of-america-s-highest-science-honours.html>] [21-Nov-17]

University of Sydney

University of Sydney Professor of Computer Science Dacheng Tao has been named a Fellow of the American Association for the Advancement of Science (AAAS), one of the highest honours in the field.[More.. \[https://sydney.edu.au/news-opinion/news/2017/11/21/ai-expert-awarded-one-of-america-s-highest-science-honours.html\]](https://sydney.edu.au/news-opinion/news/2017/11/21/ai-expert-awarded-one-of-america-s-highest-science-honours.html)

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**Meet our most influential minds of 2017** [<https://sydney.edu.au/news-opinion/news/2017/11/16/seven-academics-named-in-influential-highly-cited-scholars-list.html>] [16-Nov-17]

University of Sydney

Seven academics named in influential highly-cited scholars list.[More.. \[https://sydney.edu.au/news-opinion/news/2017/11/16/seven-academics-named-in-influential-highly-cited-scholars-list.html\]](https://sydney.edu.au/news-opinion/news/2017/11/16/seven-academics-named-in-influential-highly-cited-scholars-list.html)

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**Four Sydney finalists announced in Eureka science awards** [<http://sydney.edu.au/news-opinion/news/2017/07/28/four-sydney-finalists-announced-in-eureka-science-awards.html>] [28-Jul-17]

Faculty of Engineering and Information Technologies

The University of Sydney boasts four hopefuls to take out the Australian Museum Eureka Prizes, each displaying leadership and innovation in their notable efforts to lead critical advances in Australian science.[More.. \[http://sydney.edu.au/news-opinion/news/2017/07/28/four-sydney-finalists-announced-in-eureka-science-awards.html\]](http://sydney.edu.au/news-opinion/news/2017/07/28/four-sydney-finalists-announced-in-eureka-science-awards.html)

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**New partnership with UBTECH to explore the future of AI** [<http://sydney.edu.au/news-opinion/news/2017/06/08/-university-partners-with-ubtech-to-explore-the-future-of-ai.html>] [8-Jun-17]

Faculty of Engineering and Information Technologies

The University of Sydney has launched a new \$7.5 million research centre in partnership with world-leading robotics company UBTECH Robotics to explore untapped opportunities in Artificial Intelligence (AI).[More.. \[http://sydney.edu.au/news-opinion/news/2017/06/08/-university-partners-with-ubtech-to-explore-the-future-of-ai.html\]](http://sydney.edu.au/news-opinion/news/2017/06/08/-university-partners-with-ubtech-to-explore-the-future-of-ai.html)

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**Highly-cited researcher joins School of Information Technologies** [<http://sydney.edu.au/engineering/news-and-events/2016/12/02/highly-cited-researcher-joins-school-of-information-technology.html>] [2-Dec-16]

Faculty of Engineering and Information Technologies

The Faculty of Engineering and Information Technologies has attracted high-profile researcher, Professor Dacheng Tao, who will join the School of Information Technologies on 5 December.[More.. \[http://sydney.edu.au/engineering/news-and-events/2016/12/02/highly-cited-researcher-joins-school-of-information-technology.html\]](http://sydney.edu.au/engineering/news-and-events/2016/12/02/highly-cited-researcher-joins-school-of-information-technology.html)

# Related research articles

News\_

27 August 2019



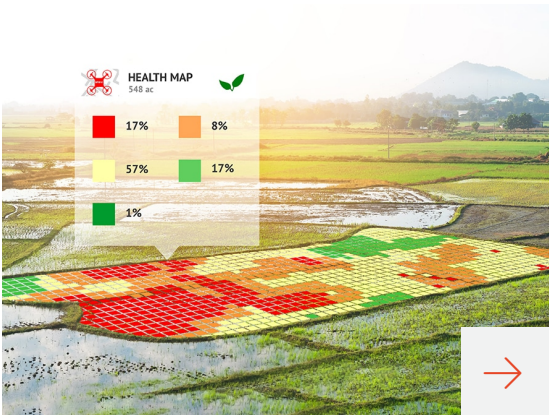
## University receives \$4 million for data science research

The University of Sydney has been announced as a recipient of a \$3.9 million ARC grant, which will enable researchers to apply data science models against real world challenges, such as water storage, biodiversity loss and the extraction of mineral resources.



News\_

20 August 2018



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