

**Curriculum Vitae of Chao Chen**  
**Department of Mechanical and Aerospace Engineering**  
**Monash University**

**Education**

DEGREE	INSTITUTION	DEPARTMENT	THESIS FIELD	YEAR
B.Eng.	Shanghai Jiao Tong University	Mechanical Engineering		1996
M.Eng.	McGill University	Mechanical Engineering	Robotics	2002
Ph.D.	McGill University	Mechanical Engineering	Robotics	2006

**Full Time Employment, Sabbatical Leave and University Administrative Functions**

DATES	EMPLOYER	POSITION
2011-present	Department of Mechanical & Aerospace Engineering, Monash University (Clayton), Australia	Senior Lecturer
2019-present	Department of Biomedical Engineering The Chinese University of Hong Kong	Adjunct Associate Professor
2015-2017	Department of Otolaryngology, University of Melbourne	Senior Research Fellow

**Lifetime Academic, Research and Professional Honours (prizes, medals, honorary fellowships, etc.)**

DATE	AWARD TITLE	AWARDED BY
2020	Superior Paper Award	Computers and Electronics in Agriculture
2017	Year's Innovation Award	Australian Hand Therapy Association
2006-07	FQRNT Post-Doctorate Fellowship	Fonds québécois de la recherche sur la nature et les technologies
2005	FQRNT Doctorate Scholarship	Fonds québécois de la recherche sur la nature et les technologies
2004	ASME Quebec Scholarship	American Society of Mechanical Engineers
1996	Dean's Honor List	Shanghai Jiao Tong University, China

**Research Interests**

*Robotics:* agricultural robot for fruit harvesting, motion simulator, robotic traffic speed deflectometer, robotic profiler for accelerated loading facility, path planning, gait generation

*Theoretical Fundamentals:* Riemannian Geometry, screw theory, constraint analysis, topological analysis, homotopy continuation

**Selected Invited Scholarly Addresses**

- 2022 Monash Apple Retrieving System (MARS), Plenary Talk in Interpoma in Bolzano Tradeshow
- 2013 Motion Generation and Analysis with applications in robotic surgery and hybrid electric vehicles, Institut de Recherche en Communications et Cybernétique de Nantes.
- 2013 Robotic Motion Evaluation, Analysis and Generation, Tsinghua University.
- 2011 The application of differential geometry on robotics, Ecole Central de Nantes
- 2011 Mobility of robotic manipulators and mechanisms, King's College London.

**Selected Patents**

C. Chen, H, Zhou, X, Wang, and W, Au, Robotic fruit picking apparatus, New provisional application: (Monash ref: 2021-035-01) (FB Rice ref 535797PRV).

M Godfrey and C Chen, Semi-active robotic knee exoskeleton, Provisional Patent NO 201907601, 2019.

C Chen and K Granland, Translational parallel manipulator, Provisional Patent NO 2017903635, 2017.

C Chen and S Liu, Improved remote centre of motion mechanism, Australian Patent No 2016250360, 2016.

C Chen, A linkage with remote center of motion for robotic surgery, Provisional Patent NO 2012902769, 2012.

**Selected Publications**

1. Wang, X, Zhou, H, Kang, H, Au W, & Chen, C, 2021, Bio-inspired soft bistable actuator with dual actuations, *Smart Materials and Structures*, vol. 30, 125001. <https://doi.org/10.1088/1361-665X/ac2e19>
2. Kang, H. & Chen, C., 2020, Fast implementation of real-time fruit detection in apple orchards using deep learning, *Computers and Electronics in Agriculture*. 168, 10 p., 105108.
3. H Liu, HQ Tian, C Chen, and YF Li, 2013, An experimental investigation of two Wavelet-MLP hybrid frameworks for wind speed prediction using GA and PSO optimization, *International Journal of Electrical Power & Energy Systems*, 52, 161-173.
4. Chen, C. and Jackson, D., 2011, Parameterisation and Evaluation of Robotic Orientation Workspace: A Geometric Treatment, the *IEEE Transactions on Robotics*, 27 (4), 656-663.

**Selected Media Reports**

1. 2021, ABC News, Fruit-picking robot technology will be efficient and affordable for farmers within years  
<https://amp.abc.net.au/article/100107796>
2. 2021, BBC News, AI labour bears fruit in Australia  
<https://www.bbc.co.uk/programmes/p09g8231>
3. 2021, Nine News, New robot technology could revolutionise the way fruit and vegetables are harvested in Australia  
<https://www.facebook.com/9NewsGippsland/videos/robot/371754157535307/>