Tianyi Yang

7 Agra Street Mitcham 3132 VIC
M: 0452605045
E: arctinapal@gmail.com
tianyiyang@swin.edu.au

Architect ARBV 80007
PhD Candidate, Swinburne University of Technology

Overview

Tianyi Yang is an award-winning Registered Architect, PhD candidate (under minor revision), and teaching research fellow at the Swinburne University of Technology, with expertise in architectural design, sustainable urban studies, and performance-driven design research. Her PhD research explores innovative methods to improve stroke rehabilitation environments by enhancing visual connectivity and view quality through transdisciplinary design approaches.

At Swinburne, Tianyi has had the opportunity to contribute as a researcher and educator in both undergraduate and post-graduate programs, leading courses in urban informatics, dynamic modelling, and performance-based design over the past 6 years. Her research explores complex architectural and urban challenges such as walkability, sunlight access, urban forestry, and pedestrian safety, utilising emerging technologies like GIS, immersive virtual environments, gaming design tools, and data-driven methods to provide evidence-based solutions.

Tianyi's architectural practice experience spans Australia, China, and Europe, including roles in architectural design, urban planning, and project delivery. Her work ranges from education precincts and healthcare facilities to large-scale urban design projects, demonstrating a strong ability to bridge research and practice.

Education

2024	**PhD in Architecture/Design** ***(Minor Revisions Approved, Award Pending)*** ***Swinburne University of Technology, Hawthorn, Australia*** **Thesis Title:** *"Investigating Stroke Rehabilitation Architecture: Increasing Visual Connectivity and View Quality with a Performance-Integrated Design Approach"*
2016	**Master of Architecture with Distinction** ***RMIT University, Melbourne, Australia***
2015	**Visiting School -*University of Applied Arts Vienna, Vienna, Austria***
2014	**Bachelor of Architecture** *(1st Class Honours, Rank 1/28)* ***Nanjing University (#145 QS), Nanjing, China***
2014	**Exchange Program - Joint Thesis** ***(Master of Urban Design)*** ***The University of Melbourne, Melbourne, Australia***

Professional Registration

Registered Architect
Architects Registration Board of Victoria
Registration Number: 80007

Experience

Swinburne University of Technology, VIC, Australia

2021 - Present,	***PhD Candidate***
2018 - Present, *7 years*	***Research Assistant / Research Fellow***
2019 - Present, *5 years*	***Unit Teacher,*** *Urban Informatics and Modelling (Graduate coursework)* *Dynamic Modelling of Cities (Graduate coursework)*

University of Melbourne, VIC, Australia

2017 - 2024 *7 years*	***Tutor,*** *Flexible Urban Modelling (Graduate coursework)* *Site Tectonics (Undergraduate level 3)* *Shaping the Landscape (Graduate coursework)*
Mar 2017 - *Dec 2017*	***Research Assistant***

Sole Practitioner

Dec 2021 - Present	***Architect***

Harrison and White Pty Ltd, VIC, Australia

May 2021- *Nov 2021*	***Architect***
Sep 2017- *May 2021*	***Architectural Graduate***

TT Design Studio

Sep 2014 - 2021	***Project Designer***

SAC Building Workshop

2016	***Architectural Graduate***

RMIT University

Mar 2015 - Dec 2016 ***Master of Architecture***

China Architecture Design and Research Group, Beijing, China

2014 ***Student Architect***

Nanjing University, Nanjing, China

Sep 2010 - Sep 2014 ***Bachelor of Architecture***

Teaching and International Workshops

2019 - Present, 5 years ***Swinburne University of Technology***
Unit Teacher, Teaching & Curriculum Development
Designed and delivered high-quality, industry-aligned curriculum and teaching, integrating data-driven methodologies, emerging technologies, and performance-based decision-making to equip students for future urban and architectural challenges.
Urban Informatics and Modelling (Graduate coursework)
Dynamic Modelling of Cities (Graduate coursework)

2017 - 2024 7 years ***University of Melbourne***
Tutor,
Flexible Urban Modelling (Graduate coursework)
Site Tectonics (Undergraduate level 3)
Shaping the Landscape (Graduate coursework)

2024 ***TU Wien***
Outcomes from the NOVELL Method: A Living Lab for rethinking rehabilitation design and services. Introduction to Advanced Data-driven Design for Social Infrastructure

2022 ***North China University of Technology***
Informing Urban Future via Dynamic Informatics and Modelling. Special Research on Architecture & Urban Design Seminar

2021 ***North China University of Technology***
Informing Urban Future via Dynamic Informatics and Modelling. Responsive Urban Modelling Using Game Development Software International Workshops.

2021 ***North China University of Technology***
Informing Urban Future via Dynamic Informatics and Modelling. Special Research on Architecture & Urban Design Seminar

2017 ***The University of Melbourne and Tongji University Collaborate Studio***
Shanghai Traveling Studio Coordination

2014 ***The University of Melbourne and Nanjing University Collaborate Studio***
Nanjing Traveling Studio Coordination

Research Projects

2021 to present **PhD Thesis: Investigating Stroke Rehabilitation Architecture: Increasing Visual Connectivity and View Quality with a Performance-Integrated Design Approach**

- *Published peer-reviewed journal articles* ***(Q1 in Architecture)***
- *Collaborated with healthcare professionals, policymakers, architects, engineers and end-users.*

This thesis aims to develop and test a performance-integrated design approach to improve visual connectivity and view quality in stroke rehabilitation facility architecture.

2021 to present **ARC-Linkage Walk-quality: A multi-criteria design platform to facilitate active travel**
https://walk-quality.com/
Chief Investigators*: Prof Marcus White (SUT), Prof Mark Stevenson (UoM), Dr Robyn Schofield (UoM), A/Prof Stephen Livesley (UoM), Dr Nano Langenheim (UoM).*

- *Collaboration with city councils, including* ***City of Maribyrnong, City of Glen Eira, and City of Port Phillip****.*
- *Published peer-reviewed journal articles* ***(Q1 in Architecture & Urban Studies)****.*

This ARC-linkage project attempts to fill a gap in understanding the micro-level spatial and environmental factors contributing to walk quality and provide open-access digital tools to help urban design professionals make better planning decisions and help the community plan safer and more comfortable walking routes.

2018 to present **Neuroscience Optimised Virtual Environments Living Lab (NOVELL)**
https://www.novellredesign.com/

- *Published peer-reviewed journal articles* ***(Q1 in Architecture & Neuroscience)****.*
- *Collaborated with healthcare professionals, policymakers, architects, and engineers, including* ***STH Health Architecture, Vivid Wayfinding, McR Architects, Stantec, Jacobs, Maynard, and the Stroke Foundation****.*

NOVELL Redesign is a healthcare redesign and innovation project focused on transforming stroke rehabilitation environments. The process is user-centred, multi-stakeholder and led by an interdisciplinary team. This project brought a pioneering and rigorous approach to healthcare design. Using a Living Lab framework and a Design Science approach, this project integrates evidence from rehabilitation architecture and neuroscience with cutting-edge technology to produce new, virtual rehabilitation facility designs, which can be tested, evaluated, refined and realised.

2019	**Exploring the balance between movement and place in designing safe and successful places (Transport for NSW)** ● *Published peer-reviewed journal articles **(Q2 in Public Health, Environmental and Occupational Health)**.* ● *Collaborated with Transport NSW* *Transport partnered with Swinburne University of Technology on this research to support Transport for NSW (Transport) and local councils in delivering high-quality, successful places. The study was designed to understand how immersive virtual environments could be used to assess pedestrians' perceptions of safety and place. Immersive virtual environments generally use virtual reality to simulate an experience. It evaluated the impact of urban design elements and safety treatments such as wombat crossings and increasing tree canopy.*
2018-2019	**RiSE-VR (Reimagining Stroke Environment with Virtual Reality) with The Florey Institute of Neuroscience and Mental Health** ● *Published peer-reviewed journal articles **(Q1 in Neuroscience and Rehabilitation)**.* ● *Collaborated with Florey Institute of Neuroscience and Mental Health, Austin Hospital* *Developed 3D Virtual Reality Windows PC application that provides simulated hospital environments to assist the study and evaluation of how physical built environment factors influence the responses of people with neurological disorders (PwND).*
2019	**Swinburne - iHUB: Smart urban research-synthesis-engagement platform for decision-making** ● *The iHUB National Urban Research Platform resulted from a successful $1.8 million LIEF grant awarded by the Australian Research Council (ARC). Swinburne is the lead institution in a consortium of universities that includes the University of New South Wales, University of Queensland, Monash University and Curtin University.* ***Role:** Researched and evaluated the potential technologies/programs for the platform. Imaging lasers scanned the potential environment in Swinburne. Explored, designed and prototyped the design variations.*
2018	**Housing Expo Research and Exhibition - Virtual Moreland & Density by Design** ● *Collaborated with the IBA Board and Kerstin Thompson Architects in IBA LAB project: Virtual Moreland Density by Design - a study in density on a surface car park site in Moreland.* ***Role:** Produced the animations, special effects and videos that summarise the outcome of the study.*
2017	**The City of Melbourne Public Open Space Solar Study** ● *Collaborated with City of Melbourne* *Role: Sun envelope calculation on Public Space of Melbourne City (Rhino with Grasshopper).* *Envelope contours (Autodesk 3DsMax, QGIS, Autodesk Civil3D).*

Shaded City- Public Open Space Solar Study Publish
Role: Web Development. Mapbox JS GL, Javascript, HTML and CSS
Citiesoflight.xyz
City of Maribyrnong Shaded Pedestrian Access Study
Study of Maribyrnong tree-shade walking access from schools. Mapping. Geospatial Data Analysis and Visualisation.

Publications, Conferences, Exhibitions, Awards and other NTROs

Peer-reviewed Journal Papers

- Yang, T., White, M., Lipson-Smith, R., & Latifi, M. (2024). The State of Stroke Rehabilitation Design in Australia: A Multi-Scalar Systematic Architecture Precedent Review. Buildings, 14(12), Article 12. https://doi.org/10.3390/buildings14123968. ***[Q1 in Architecture]***
- Yang, T., White, M., Lipson-Smith, R., Shannon, M. M., & Latifi, M. (2024). Design decision support for healthcare architecture: A VR-integrated approach for measuring user perception. *Buildings, 14*(3), Article 3. https://doi.org/10.3390/buildings14030797. ***[Q1 in Architecture]***
- Shannon, M. M., Lipson-Smith, R., Elf, M., White, M., Olver, J., Yang, T., & Bernhardt, J. (2025). Exploration of hospital room design on emotions, activity, and social connections after stroke: A qualitative study of patient experiences using virtual reality. *Disability and Rehabilitation,* 1–10**.** ***[Q1 in Rehabilitation]***
- https://doi.org/10.1080/09638288.2025.2451771
- Shannon, M. M., White, M., Churilov, L., Yang, T., Lipson-Smith, R., Elf, M., Olver, J., & Bernhardt, J. (2024). Re-imagining hospital patient room design for people after stroke: A randomised controlled study using virtual reality. *Stroke*, *55*(7), 1895–1903. https://doi.org/10.1161/STROKEAHA.124.046252. ***[Q1 in Neuroscience]***
- Saa, J. P., Lipson-Smith, R., White, M., Davis, A., Yang, T., Wilde, J., Blackburn, M., Churilov, L., & Bernhardt, J. (2023). Stroke Inpatient Rehabilitation Environments: Aligning Building Construction and Clinical Practice Guidelines Through Care Process Mapping. *Stroke*, *54*(11), 2946–2957. https://doi.org/10.1161/STROKEAHA.123.044216. ***[Q1in Neuroscience]***
- White, M., Langenheim, N., Yang, T., & Paay, J. (2023). Informing streetscape design with citizen perceptions of safety and place: An immersive virtual environment e-participation method. Internat*ional Journal of Environmental Research and Public Health*, *20*(2), Article 2. https://doi.org/10.3390/ijerph20021341. ***[Q2 in Public Health, Environmental and Occupational Health]***
- White, M., & Yang, T. (2023). Cool Urbanism, the Radiant Exitance City. John Wiley & Sons, Vol 93, 62–71.***[Q1 in Performance and Visual Arts, Q2 in Architecture]***
- White, M., Huang, X., Langenheim, N., Yang, T., Schofield, R., Young, M., Livesley, S. J., Seneviratne, S., & Stevenson, M. (2022). Why are people still not walking? The need for a micro-scaled multi-criteria spatio-temporal design approach to improve walk-quality. ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences, X-4-W3-2022, 269–276. https://doi.org/10.5194/isprs-annals-X-4-W3-2022-269-2022.
- White, M., Langenheim, N., & Yang, T. (2022). Dark cities or cities of light? – Sunlight amenity preservation at whole-city scale using a spatio-temporal decision support approach. Environment and Planning B: Urban Analytics and City Science, 23998083221143120. https://doi.org/10.1177/23998083221143120. ***[Q1 in Architecture]***

Peer-Reviewed Conference Papers

- Yang, T., Lipson-Smith, R., White, M., & Latifi, M. (2024, June). Exploring visual connectivity in stroke rehabilitation through VR. 10th European Healthcare Design Congress (EHD 2024), [Poster and Video Presentation], London, UK.
- Lipson-Smith, R., Lim, M., White, M., Yang, T., & Davis, A. (2024, June). Outcomes from the NOVELL method: A living lab for rethinking rehabilitation design and services. European Healthcare Design Conference 2024, London, UK. https://europeanhealthcaredesign2018.salus.global/uploads/media/conference_document/0001/40/1543bab7ad6c0e372b804f41c32ab71df309856e.pdf
- Davis, A., Lipson-Smith, R., White, M., Lam, M. H. C., Yang, T., & NOVELL Redesign Collaboration. (2024, June). The Neuroscience Optimized Virtual Environments Living Lab (NOVELL) A new way to design environments and services. ARCH24 The 6th International Conference on Architecture, Research, Health, and Care. Aalto University, Finland.
- Yang, T., White, M., Lipson-Smith, R., & Latifi, M. (2022). Sightlines and visual connection in stroke rehabilitation facilities: A systematic desktop review and evaluation of different facility designs. Australasian Health Design Conference. (2022). [Oral Presentation]. Melbourne, Australia.
- Yang, T. (2022). Informing the healthcare environment design process via rapid prototyping in immersive virtual environments. NOVELL Redesign Seminar. (2022). [Oral Presentation]. Melbourne, Australia.
- Exploring hospital patient room physical design factors that influence the effect using virtual reality. (2022). [E-poster]. Celebrating Research 2022, Peninsula Health, Melbourne, Australia.
- Moving beyond patient factors in the design of stroke care environments: A virtual reality exploration of the impact of hospital patient room design. (2022). [E-poster]. 8th European Stroke Organisation Conference, Lyon, France.
- Shannon, M., White, M., Olver, J., Yang, T., Pert, A., Elf, M., & Bernhardt, J. (2020). What Does Virtual Reality Technology Reveal About Single and Multi-Patient Room Design and its Impact on Stroke Survivors? International Journal of Stroke(1_SUPPL). https://findanexpert.unimelb.edu.au/scholarlywork/1489885-what-does-virtual-reality-technology-reveal-about-single-and-multi-patient-room-design-and-its-impact-on-stroke-survivors%3F
- Shannon, M., White, M., Olver, J., Yang, T., Pert, A., & Bernhardt, J. (2019). Using virtual reality to extend knowledge about healthcare design in people with stroke: Exploring single versus multi-patient rooms by using the virtual reality rapid-prototyping. International Journal of Stroke, 14. https://doi.org/10.1177/1747493019862960

Exhibitions:

- Yang, T., Lipson-Smith, R., White, M., Mark, L., Latifi, M., & Davis, A. (2023, November 2). NOVELL Exhibition, Harbour Kitchen, Glass Pavilion Room, Docklands, Melbourne. https://www.novellredesign.com/blog/novell-exhibition.
- White, M., Yang, T., Latifi, M., Kvan, T. Karakiewicz, J. A., Langenheim, N. & Çapar, M. (2022, Aug–Nov). '热辐射发散城市：凉爽的都市主义' [Exploration of performance integrated digital design prototyping]. Shenzhen Biennale on Architecture and Urbanism, Shenzhen, China.
- SiteWorks Gallery. (2019 November 1- 2019 November 5). Housing Expo - Virtual Moreland & Density by Design. Melbourne
- MPavilion.(2020 March 30)MMeets—Technology-Driven Approaches In Healthcare Architecture and Design. Melbourne
- Industry City Gallery (2016 May 7 - 2016 May 21). Wanted Design - Alessi Mutants.

Brooklyn New York

Book Illustrations Production and Editing:

- White M., & Langenheim N. (2020). The Death of Urbanism: Transitions through five stages of grief. https://researchbank.swinburne.edu.au/items/7d9ad3ac-0b87-47e8-8636-1fe367528914/1/

Software output from the research:

- Yang, T. (2023). VR - Explore perceptions of communal areas in rehabilitation facilities: The role of visual connectivity and distance [Unreal Engine 5, Windows VR].
- Yang, T. (2023). VR - Explore window view in patient rooms [Unreal Engine 5, Windows VR].
- Yang, T., White, M., Lim, M., Latifi, M., & Lipson-Smith, R. (2023). VR - NOVELL bedrooms [Unreal Engine 5, Windows VR].
- Yang, T., White, M., Lim, M., Latifi, M., & Lipson-Smith, R. (2023). VR - NOVELL wards [Unreal Engine 5, Windows VR].
- Yang, T., & White, M. (2018). Hospital VR - Exploring single versus multi-patient rooms by using the virtual reality rapid-prototyping [C++, Unity; PC].
- Yang, T., & White, M. (2017). Cities of Light [Javascript, Mapbox GL, HTML CSS; Web Application]. Citiesoflight.xyz

Practice Experience

Harrison and White Pty Ltd, VIC, Australia

Planning submission, Master Planning, Documentation, Schematic Design, Tender, BIM Management, Visualisation, Consultation, Presentation, Project Management, International Collaboration

- *DHHS Community Care | Mentone Melbourne*
- *Sustainable Hub, Lilydale Heights | Lilydale Melbourne*
- *Lilydale Heights College Sports Pavilion | Lilydale Melbourne*
- *Lilydale High School, Zoology and Administration | Lilydale Melbourne*
- *Lilydale High Master Planning | Lilydale Melbourne*
- *Upper Yarra Secondary College Master Planning| Upper Yarra Melbourne*
- *Lilydale Heights Master Planning | Lilydale Melbourne*
- *Lilydale and Upper Yarra Education Plan | Melbourne*
- *St Matthew's Primary School | Melbourne*
- *Good Samaritan Primary School | Melbourne*
- *Retail street, commercial architecture Preliminary design | Guilin China*

SAC Building Workshop, VIC, Australia

Planning submission, Documentation, Schematic Design, Visualisation,

- *Multiple Units Townhouse Development, Moreland Road | Brunswick West*
- *Multiple Units Townhouse Development, 651 Moreland Rd | Pascoe Vale South*

- *Multiple Units Warehouse Development, 55-59 Halsey Rd | Airport West*

TT Design Studio, VIC, Australia
Documentation, Schematic Design, Tender, BIM Management, Visualisation, Consultation, Presentation, Project Management, Graphic Design, Contract Admin

- *Elephone - Eastland Shopping Centre, Kiosk Design| Ringwood*
- *Elephone - Bayside Shopping Centre, Kiosk Design| Frankston*
- *Elephone - Woodgrove Shopping Centre, Kiosk Design| Melton West*
- *Elephone - Watergardens Shopping Centre, Shop Design| Taylors Lakes*
- *Elephone - Glen Shopping Centre, Kiosk Design| Glen Waverly*
- *Elephone - Highpoint Shopping Centre, Shop Design| Maribyrnong*
- *East West Asia Grocery - Watergardens Shopping Centre, Shop Design | Taylors Lakes*

China Architecture Design and Research Group | Beijing
2014, Student Architect
Schematic Design, Visualisation,

- *Hengtai Rural Bank Office*
- *Yangquan College Campus Development*
- *Affordable Housing Beijing*

Award and Grants

- Swinburne University Postgraduate Research Award (2020-2024), Swinburne University of Technology, VIC, Australia
- School of Design and Architecture 2023 HDR Publication Award (2023), Swinburne University of Technology, VIC, Australia
- Redesigning rehabilitation: The NOVELL (Neuroscience Optimised Virtual Environments Living Lab) way. (2022). The Design Research Award, 2022 European Healthcare Awards, London, UK.
- Outstanding Graduates Award (2014), School of Architecture and Urban Planning Nanjing University, Nanjing, China
- 1st Award in China University Student's Platform for Research Innovation and Entrepreneurship Training Program (2015), *Renewable Energy Efficiency in Commercial and Residential Architecture in Nanjing,* Nanjing University, Nanjing, China
- Excellent Work in the competition of 2015 overseas exchange students' works of Chinese architecture schools (2015), *Footscray Up to 11,* Nanjing University, Nanjing, China
- Excellent Student Work in the competition of 2013 Architectural Design Teaching Plan and Achievement of China Institution of Higher Learning (2014), *Museum Design of Pearl Buck's,* Nanjing University, Nanjing, China
- LiaoShi Scholarship for excellent students (Top 3% of students) (2014), Nanjing University, Nanjing, China
- Renmin Scholarship for excellent students (Top 10% of students) (2013), Nanjing University, Nanjing, China

Other Research Activities

- *2016 Master Thesis: "Formal and Informal" | Dr John Dolye*
- *2016 Slow Robotics | Dr Gwyllim Jahn*
- *2016 Sacrificing Form |Dr Roland Snooks, Mr Cam Newnham*
- *2014 Research on Urban Heat Island Effect, Melbourne Australia | Dr Marcus White.*
- *2013-2014 Renewable Energy Efficiency in Commercial and Residential Architecture in Nanjing Study(1st Class Award) | Prof. Menghao QIN*
- *2013 Research on Energy Efficiency Simulation by Digital Technology | Dr Wei WU*
- *2013 Window Wall Area Percentage and Energy Efficiency Study | Dr Wei WU*
- *2012 Surveying and Documenting Heritage —the Chinese Traditional Residence, Bao Zhu Lou, Ningbo, China. Chinese traditional wooden structure and techniques in Southeast China study.| Prof. Chen ZHAO*

Software and Proficiency

Architecture *Modelling, Simulation, Documentation, Visualisation*	*Rhino + Grasshopper, Autodesk Revit, Autodesk 3DS Max + Tyflow, Sketchup, Autodesk AutoCAD* *Vray, Lumion, Octane, Enscape, Twinmotion, Chaos Vintage*
Urban Design and GIS *Spatial Data Analysis, Visualisation, Modelling*	*QGIS* *Autodesk Civil 3D* *Mapbox GL JS* *Cesium ion*
Office	*Microsoft Office Suite*
Programming	*Javascript, Visual Basic, Python, HTML+ CSS, Grasshopper- Rhino, Unreal Engine Blueprint*
Gaming Engine	*Unity, Unreal Engine 5*
Graphic	*Adobe Photoshop, Adobe Illustrator, Adobe Indesign, Adobe After Effect, Adobe Premiere Pro*
Statistical Analysis	*NVivo, IBM SPSS Statistics, Qualtrics*

Referees

Prof. Marcus White *PhD (RMIT SIAL) RAIA* *Architect ARBV 17238* *University Professor,* *Swinburne University of Technology*	*T: + 61 9035 5854* *M: + 61 403 439 494* *E: marcuswhite@swin.edu.au*
Stuard Harrison *Architect* *Senior Lecturer, University of Melbourne*	*T: + 61 393 944 221* *M: + 61 414 610 604* *E: stuart.harrison@haw.com.au*
Dr. Mehnroush Latifi *PhD (RMIT SIAL)* *Senior Lecturer,* *Swinburne University of Technology*	*T: + 61 392 144 579* *M: + 61 411 089 470* *E: mlatifi@swin.edu.au*
Dr Ruby Lipson-Smith *BA, BSc(Hons), PhD* *Postdoctoral Researcher, NOVELL Redesign* *Postdoctoral Research Fellow, Western Sydney University*	*T: + 61 383 440 030* *E: ruby.lipson-smith@florey.edu.au*
Prof. Jeni Paay *Director, Centre for Design Innovation* *School of Design + Architecture* *Swinburne University of Technology*	*T: + 61 392 145 615* *E: jpaay@swin.edu.au*
Dr. Nano Langenheim *Assistant Dean Technology* *Senior Lecturer in Landscape Architecture and Urban Design,* *University of Melbourne*	*M: + 61 421 217 569* *E: nano.langenheim@unimelb.edu.au*