

長照裡的軍師

AI STRATEGIST

TO GUIDE LONG-TERM HEALTHCARE EFFORTS

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Image courtesy of Professor Po-Lun Chang
and the Secretariat

長照賽道的搭檔

隨著台灣步入超高齡社會，許多家庭時常都在參與一場無形的「照護接力賽」。不論是早晨為家中長輩量血壓、下班後與居家照護員聯繫，或是週末全家坐下來討論健康管理，每一棒都仰賴家屬、社區日照中心、居家照護人員與專業醫護團隊的緊密合作，才能讓這「照護棒」順利傳遞下去。

Relay teams for long-term healthcare

As Taiwan becomes a super-aged society, more and more people find themselves caught up in a "caregiving relay race." It might be a person who starts each morning by taking an elderly family member's blood pressure, then touches base with a home care aide after work, or someone who gathers the whole family on weekends to talk about managing the health of an elderly member. Every handoff between caregivers relies on the tight cooperation of family members, community day-care centers, home care workers, and professional medical teams to keep the "care baton" moving smoothly.





但現實往往沒這麼理想。有時護理紀錄來不及更新，下一位照護者只能匆忙上場；偶爾家屬等不到最新狀況，也只能在旁焦急等待；外籍看護如果遇到語言障礙，交接過程更是困難重重。這些經常出現的環節，正是長照團隊中最容易「掉棒」的關卡，每一次交接都考驗著大家的細心與默契。

另一方面，歷史上的諸葛亮，不衝鋒在前，但總是最懂得調度、最讓人安心那一位。那麼，有沒有人想過，如果照護團隊裡能多一位智慧軍師，幫大家統籌安排、協調溝通、指引方向，是不是就能讓每一棒接力順利完成，每個成員各司其職？其實這樣的 AI 軍師，已經在現代長照現身囉！生物醫學資訊研究所的張博論教授，帶領團隊開發出御曲智慧溝通協作整合平台，讓每一棒照護接力都能有人協助溝通調度、不再掉棒。

而這位軍師究竟長什麼樣子呢？只要打開由張老師與學校專業師生創立的九日生 (www.9rise.com)，迎面而來就是四個明確分工的長照角色 app：專業人員端、照顧端、家屬端與個案端，就像團隊裡每個人都換上專屬制服，各自站在自己的崗位上。醫護人員擁有專屬介面，能隨時查詢長輩的健康數據、填寫紀錄、接收即時資訊，還能遠距指派任務

Professor Po-Lun Chang
張博論教授



When taking part in a caregiving relay race, how do we keep the "care baton" moving smoothly?

在參與一場照護接力賽時，是否有方法可以讓這「照護棒」順利傳遞下去呢？

In real life, care baton passes are rarely seamless. Some days, nursing records may not be updated on time, leaving the next caregiver scrambling to figure things out. Other days, a family member may sit by the phone, waiting for an update that never comes. In Taiwan and many other Asian societies, it's common for families to hire live-in caregivers from abroad to help look after elderly relatives. When one of these caregivers encounters a language barrier, the handoff may become a real challenge. These moments in the relay where the baton feels likely to slip test the patience, communication skills, and cooperation of every member of the long-term care team. Therefore, coordination of the team is essential for the wellbeing of everyone involved.

In ancient China, Zhuge Liang was not a warrior fighting on the front lines but a trusted strategist working quietly behind the scenes. He is renowned as a historical figure for his wisdom and

or giving medical advice, let medical care extend to every family corner. Caregivers also have a specially designed operation page, daily records, and emergency status reports become simple and direct, even when encountering language barriers, the built-in multi-language translation function can also assist immediately.

Family members can also use the dedicated app,随时掌握親人的健康狀態與照護內容，不再擔心錯過任何重要訊息，更能放心參與照護討論。至於長輩本人，也有互動功能，可主動記錄健康狀況。這四大角色各司其職，訊息同步協作如同精密接力，每一棒都穩穩傳遞。

智慧軍師上場了！

事實上，御曲帶來的早已超越單純的訊息聯絡。張老師分享，平台在幕後建立起結合專業分工與科技管理的照護群組。每位長輩加入平台後，醫護團隊、個案管理師、家屬和外籍看護自動分進專屬群組，一組給專業團隊討論醫療方案，另一組則讓家屬能隨時參與、溝通大小照護細節。

Visit the Nine Suns Rising Mobile Tech website to check out the AI strategist for long-term healthcare.

一起到九日生官網看看長照裡的 AI 軍師長什麼樣子吧！

talent for careful planning. For those unfamiliar with Chinese history, similar roles are played by Western literary characters like Merlin from Arthurian legend or Gandalf from The Lord of the Rings. These wise advisers provide steady guidance to help the central figures in the stories surmount every challenge. Imagine if every long-term healthcare team had their own "strategic advisor," someone dedicated to planning, smoothing communication, and guiding everyone in the right direction. With a resource like that, every baton in the caregiving relay could be passed without hesitation, and each team member could play their role with confidence.

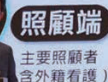
In fact, an "AI strategist" like this has already been created to manage modern long-term care, as Professor Po-Lun Chang from the Institute of Biomedical Informatics has led a team to develop NorbelHarmony Connect. With this platform, every handoff in the caregiving relay can be supported by coordinated communication and information exchange, so the baton is always passed smoothly and never dropped.

What does this "AI strategic advisor" look like? Visitors to the Nine Suns Rising Mobile Tech website (www.9rise.com), created by Professor Chang and his team, can find four apps designed to address clearly defined long-term care roles. The apps appear almost like four team members in uniform, ready to step into their roles.

With the platform, medical professionals have a dedicated interface where they can quickly review an elderly patient's health data, update records, receive real-time alerts, and even assign tasks or give medical advice remotely, bringing healthcare

比 更適合照護團隊工作的跨領域溝通工具

四端 App 資訊即時同步，讓協作更緊密，照護更透明



以外籍看護為例，只要用手機 app 輸入每日照護紀錄，或直接拍照、錄影，平台就能自動判讀分析。有異常狀況，個案管理師與醫護人員第一時間可收到提醒，即時處理狀況。群組介面也方便管理師統整照護進度、邀請跨專業人員共同討論。

這套智慧照護協作平台強調資訊透明、即時同步，配合 AI 判讀，讓回報與討論有跡可循，團隊合作更高效，同時也讓所有參與照護的成員隨時在線、快速回應需求，就算照護現場遍布各地，團隊默契始終在線。

另外，雖然在目前政策下，想讓醫療、照護工作高度整合，通常還是需經過政府評估與申請，由專業團隊帶領家屬、外籍看護等各方角色共同進入平台，app 本身也對外開放，任何有照護協作需求的民眾或團體都能下載使用，無論家庭合作或社區連線都能彈性支援。

在這樣的數位支持下，無論家屬人在遠方，還是長輩身邊圍繞不同照護人員，每一次健康資訊的傳遞、每一項照護細節的安排，都變得清楚、安心又有記錄。張老師說：「我們期待的是，把這個數位平台從溝通工具，進一步拓展為完整的長照支持生態圈，讓每一個需要被照顧的人，都能有自己的專屬 app 和團隊，生活的方方面面都能被照看到。」這也讓御曲超越一般通訊工具，成為真正為台灣高齡未來打造的智慧照護網絡。

right into the home. Caregivers have another interface, making it simple to complete daily logs and incident reports. If the caregiver encounters a language barrier, a built-in multilingual translation feature can provide instant support. Family members also have an app that lets them track their loved one's health and care at any time, so they never miss important updates and can feel confident joining care discussions. Finally, the seniors themselves have interactive tools that allow individuals to actively record their own health status. Each of these four roles has its own responsibilities, and the apps work together by syncing information and tailoring it to the right audience. In this way, the caregivers can perform like a well-practiced relay team, ensuring every handoff is steady and nothing gets missed.

The guiding mind steps forward

NorbelHarmony offers features far beyond simple message exchanges. Professor Chang explains that behind the scenes, the platform supports the formation of strong care groups by linking professional expertise with technology-driven management. Once a senior is enrolled, the medical team, case managers, family members, and foreign caregivers are automatically placed into dedicated groups. One group is for the professional team to coordinate and discuss medical plans, while another keeps family members engaged and communicates frequently about details of care, big and small.

For caregivers from abroad, the app can greatly ease their burdens of decision-making and communication. All the caregiver needs to do is enter daily care records into the mobile app or simply take photos or videos. The platform automatically interprets and analyzes the information. If any concerning information is detected, the case manager and medical staff are instantly alerted so they can respond immediately. The group interface also makes it easy for managers to review care progress and invite cross-disciplinary professionals to join discussions.



The aim of NorbelHarmony is for anyone who needs care to have their own app and team, so every aspect of their life is cared for.

御曲希望讓每一個需要被照顧的人都能有自己的專屬 app 和團隊，生活的方方面面都能被照看到

各位閱讀到這裡，是否還記得文章一開始，張老師形容御曲就像軍師諸葛亮？這正是張老師當初談到御曲時給我們的比喻：「它就像長照團隊裡的諸葛亮。」

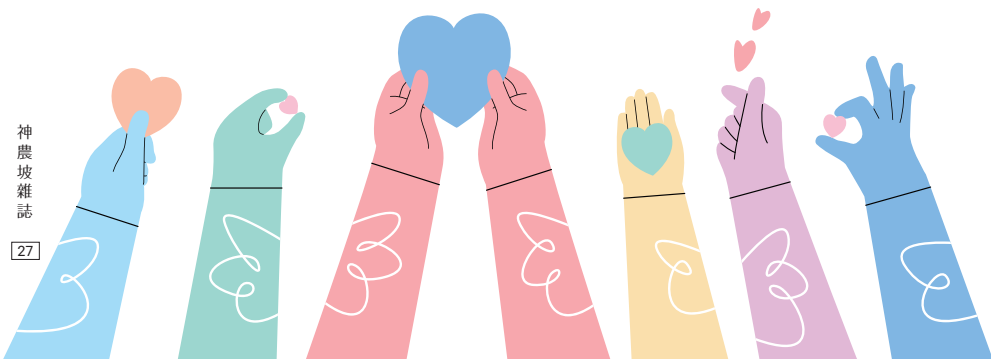
在御曲平台裡，除了傳訊息、排任務，厲害的是它總能冷靜判斷局勢、即時調度人力，為照護團隊即時丟出錦囊妙計，誰該上場、如何應對、健康異常找誰，全都了然於心。更棒的是，御曲能分析資料、預測問題，就像諸葛亮夜觀天象，把風險提前抓住，不讓危機落在第一線。

張老師也點出，未來每個家庭只要坐鎮這樣一位智慧軍師，長照生活不怕亂流，隨時能亮出錦囊、穩住陣腳，讓照護團隊人人自信、家家放心。面對挑戰時，總有這位軍師穩穩在後方出招，誰說現代長照不能有那種古典的安心感、甚至一點點英雄橋段的樂趣呢？

This smart care collaboration platform puts information front and center, keeping everything transparent and up to date in real time. With AI-powered analysis, each report and conversation is logged in a clear, traceable record, making teamwork easier and more efficient. Everyone involved in care can stay connected and respond quickly. Even if team members are in different locations, their coordination never misses a beat.

In Taiwan, integrating medical and caregiving roles usually requires government approval, and professional teams help guide families, caregivers from abroad, and others onto the platform. However, the app is available to anyone who needs to coordinate healthcare, whether for a single family or an entire community.

With this crucial digital support, it doesn't matter whether family members live far away or whether there are different caregivers helping a senior. Every piece of health information and every care detail is clearly recorded and easy to track, providing reassurance for everyone involved. Professor Chang puts it this way, "We aim to turn this digital platform from just a communication tool into a complete long-term care ecosystem, so that anyone who needs care has their own app and team, and every aspect of their life is cared for." This is what sets NorbelHarmony apart from ordinary messaging tools, making it a truly smart care network built to serve as an essential advisor in Taiwan's future as a super-aged society. When first introducing NorbelHarmony to us, Professor Chang emphasized its value by saying, "It's like adding Zhuge Liang to your long-term care team."



奔向更美好的明天

在御曲平台問世前，張博論老師早已深耕健康科技領域。自 2000 年起，他關注資訊科技從主機、桌機，一路發展到智慧型手機，並思考，這些日漸輕巧的科技，能否真正走進家庭，成為照護的幫手？當時醫療還多半仰賴傳統設備與人工，張老師總希望將行動裝置與通訊、資料處理、智能提醒整合，讓照護更完善。

隨著社會高齡化，張老師愈發堅信溫暖的科技平台是連結家庭、社區和機構的關鍵，從早年的實驗到帶領團隊開發御曲，每次修正都讓他愈發鍛鍊。在 2024 總統盃黑客松比賽中，御曲團隊從全台超過

For the team, human centered technology serves as a guiding principle, one that calls for product design with real people in mind, blending expertise with imagination, and focusing on solving the problems that matter most.

御曲團隊認為，溫暖的科技就是從人的需求出發，善用專業和創意主動解決生活中的問題

Inside the NorbelHarmony platform, the focus goes far beyond sending messages or assigning tasks. What makes the platform stand out is its ability to consider the big picture, reallocate resources in real time, and deliver the right solution at the right moment. It can advise on who should step in, how to respond, and who to call when a health concern comes up. Beyond those functions, NorbelHarmony can analyze data, anticipate potential issues, and detect risks before they become real problems, much as Zhuge Liang was said to foresee challenges before they arose.

Professor Chang believes that in the future, every family can have their own digital "strategic advisor" like this. With NorbelHarmony acting as the team's behind-the-scenes mastermind, long-term care coordination no longer has to feel overwhelming or chaotic. Whenever challenges appear, there is always a smart, timely solution ready, giving care teams more confidence and families genuine peace of mind. Who says modern long-term care cannot offer a classic sense of reassurance, or even a touch of heroic flair?

Working toward a brighter tomorrow

Before bringing NorbelHarmony to life, Professor Chang was already a trailblazer in healthcare technology. Since the early 2000s, he's watched computing technology shrink from massive mainframes to personal computers to the smartphones we carry today. He often wondered how the new smart devices could be

160 個團隊中脫穎而出，獲選為卓越團隊。這份肯定，象徵著他們「十年磨一劍」的專注與智慧，也讓御曲成為長照現場最值得信賴的科技軍師。

張老師建議有興趣投身長照健康科技領域的學生，先別想得太遠。他自己正是從對科技的興趣出發，希望技術能幫助自己、家人及身邊的人。健康照護議題現在或許看似遙遠，但未來可能成為許多家庭都要面對的現實。

張老師提到，大家平時可以多觀察社會現況，思考有哪些科技能真正改善日常困擾，並保持對趨勢的關注、啟發靈感。所謂溫暖的科技，就是從人的需求出發，善用專業和創意主動解決生活中的問題，讓科技真正幫助每一位需要被照顧的人。■

used to really make a difference in people's daily lives. Back at the turn of the century, medical care relied on clunky equipment and piles of paperwork, but Professor Chang dreamed of weaving together mobile tech, messaging, smart reminders, and data tools to make caregiving simpler and smarter.

As Taiwan's population became more and more aged, he became even more convinced that friendly, human-focused technology was the key to really connecting families, communities, and care institutions. Every small experiment and tweak along the way helped him and his team sharpen their skills, leading up to the launch of NorbelHarmony.

All the team's hard work over the years has paid off. At the 2024 Presidential Hackathon, the NorbelHarmony team outperformed more than 160 other teams from across Taiwan and earned the title of Outstanding Team. That recognition was evidence that their decade of patient, dedicated preparation had truly been worthwhile, and it sealed NorbelHarmony's reputation as the smartest and most trusted digital strategist in long-term care.

Professor Chang encourages students interested in technology for long-term care to start with curiosity and to not worry about having everything mapped out. His own path began with a love for tech and a hope that it could help his family and those around him. Even if healthcare does not feel like an urgent need now, he believes it's something most families will eventually encounter along life's journey.

When asked what advice he would give to students, Professor Chang urged young innovators to stay attuned with new developments in society and to imagine how technology can be utilized to truly make daily life better. He emphasized that staying in tune with emerging trends and allowing fresh ideas to spark creativity is essential for progress. For Professor Chang, human centered technology serves as a guiding principle, one that calls for product design with real people in mind, blending expertise with imagination, and focusing on solving the problems that matter most. In his view, technology should not only deliver convenience, but it should also be created with a sense of compassion to genuinely support those in need.

