
Leadership in Action *Reflections*

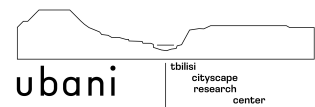
Technological Approaches to
Cultural Heritage and Urban Analytics

Tbilisi, Georgia

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ძველი ღვინო ახალ ტიკში
Old wine in a new wineskin

A Who's Who

My name is Paul Reynolds — I am a Computer Science and Mathematics student at University College London. Although, if anything, this Leadership in Action (LiA) project has reminded me that technology will only get you so far.

Along with three fellow Laidlaw scholars — whom I now call very good friends — I undertook a self-proposed LiA project in Tbilisi, Georgia. The four of us, all from different academic disciplines, converged on a strong interest in the history, culture, and landscape of Tbilisi — but crucially, how we could approach it from a new perspective. Well, it took us a while to figure out — but we knew “tech for good” would be at the core.

We then approached Ubani, a cityscape research center in Tbilisi, and they were welcoming and receptive to our ideas, providing local expertise to help shape our project. To them, we are extremely grateful. This experience has been eye-opening and transformative in many ways. Here is exactly how it happened.

London ✂ Tbilisi

Packing my life into a single bag was both daunting and liberating. As I zipped up that final pocket, it struck me that this was more than just a trip — it was the beginning of an adventure into the unknown, to a country with which I had no cultural ties and whose language isolate I had no knowledge of. With a mixture of excitement and nerves, I headed to Heathrow to embark on the longest journey I'd ever taken.

Our flight connected through Istanbul, a city that straddles two continents both physically and culturally — a fitting transition point. Back in the air, we crossed over the Black Sea under a canopy of darkness, occasionally pierced by clusters of lights — small towns and ships navigating the waters. It's humbling to realise how many lives are unfolding simultaneously, each with their own stories, challenges, and dreams.

Touching down in Tbilisi in the early hours, the city's silhouette was a blend of ancient structures and new developments. Arriving at our accommodation around 5 a.m., we climbed the stairs and were greeted by an unexpected companion: a stray dog lounging on the third-floor landing. Little did we know, this was our first introduction to one of Tbilisi's most charming quirks. The city is adorned with friendly stray dogs and cats that roam the streets, adding a layer of warmth and character to the urban landscape. They seem to belong to everyone and no one all at once.

Turning our attention to the door to our home for the next month, we faced an unexpected challenge: the padlock code to the key safe was a mystery. Running on just a couple of hours of sleep, we pooled our logic and a bit of human psychology to crack the code. Twenty minutes later, the lock clicked open — a small victory that felt monumental at the time.

Standing there, with a newfound friend by our side and the promise of an adventure ahead, I felt a sense of possibility. The world had suddenly expanded, and so had my place within it. It's one thing to read about different cultures and cities; it's another to immerse yourself in them, to navigate their challenges, and to embrace the unexpected.

The Challenges

One of the biggest hurdles we encountered was the scarcity of available data. We had to think outside the box, turning to unconventional sources. This was frustrating at times, but it also pushed us to be more inventive and resourceful. It wasn't just about finding the data—it was about creating something meaningful from it.

However, our challenges were not just technical. As we carried out our work, we found ourselves in the midst of a politically charged atmosphere. We were in Tbilisi during a wave of protests against the controversial “Law on Transparency of Foreign Influence.” This law proposed that NGOs receiving more than 20% of their funding from abroad would have to register as foreign agents, sparking fears that it would stifle democracy and press freedom in Georgia. We witnessed one of these protests outside the Government of Georgia building — an eye-opening experience that reminded us of the importance of balancing political sensitivity with our project's goals.

The protests were not just background noise — they were a reminder of the stakes involved in urban development and public policy. As Georgia continues its push for EU membership, the tensions between local sovereignty and foreign influence became palpable. Our work, grounded in data and analysis, was suddenly set against a much larger backdrop of political upheaval, giving us a firsthand look at the challenges facing the city and its people.

The Project

After much discussion and deliberation we decided to research the relationship between Tbilisi's physical features and the consequences of this for the city's urban development, to better understand how natural affects the social. How does a city like Tbilisi, with its dramatic topography and rich history, evolve?

We set out to create an engaging exploration of the city's development and history, hoping to offer fresh insights from visual data mapping and photogrammetry. Picture this: an interactive digital playground where Tbilisi's past, present, and future converge.

A Tapestry of Data

We approached our data mapping research by gathering quantitative social data on housing density, real estate prices, land use, transportation, local conflicts, health statistics, infrastructure, and more. This data was visualised on an interactive map alongside physical factors like elevation, air quality, wind patterns, flooding risks, green spaces, and light pollution. By overlaying these layers, we sought to uncover patterns and relationships that might not be immediately apparent, offering fresh insights into how natural features influence social outcomes. We began to weave together a tapestry of data that would reveal hidden connections and spark “aha!” moments.

Collaborating with Ubani, the Tbilisi Cityscape Research Center, was instrumental in bringing our project to life. Ubani is a non-profit organisation focused on exploring the built environment and landscape of the city. Their team of scholars, architects, researchers, and cultural managers provided invaluable local expertise, helping us integrate Tbilisi-specific context into our work. We are extremely grateful for their support and guidance.

The Photo Shoot

One of the most exciting aspects of the project for me was creating a 3D photogrammetric model of the Chronicle of Georgia monument. Situated atop a hill overlooking the expansive Tbilisi Sea, a massive artificial lake, the monument stands as a symbol of Georgia's rich history and cultural pride. Erected in 1985, the Chronicle of Georgia features towering pillars inscribed with intricate bas-reliefs that depict key moments from the nation's past, blending ancient traditions with Soviet-era artistry.

Determined to capture the site without the usual crowds, I arrived at 6 a.m., greeted by breathtaking views over Tbilisi Sea. I spent four hours methodically walking around the site, taking 4500 photos from every conceivable angle. This meticulous process was essential to ensure the accuracy and detail of the 3D model. Along the way, I struck up a conversation with the guards - intrigued by my unusual activity/hours of step, step, photo. Relying heavily on a translation app, we shared smiles and short stories — they were curious about my work, and I learned more about the monument's significance from their perspective.

Back in our workspace, I delved into the photogrammetry software, a new challenge that required both technical skill and creative problem-solving. I had reached out and organised a video call with a London-based expert, a UCL alumnus who specialises in photogrammetry. His guidance was invaluable and highlighted the importance of leveraging connections.

Future Plan

The goal is to publish the interactive 3D model online with Ubani's help, making it accessible to Tbilisi schools for educational purposes, as well as to locals and tourists interested in the history of Georgia and this remarkable monument. It's exciting to think that our work could enhance learning and appreciation for such an iconic site. By providing an accessible way to learn about and explore the Chronicle of Georgia, we are contributing to cultural development and sharing. This project not only preserves the monument's legacy but also fosters a deeper understanding and appreciation among diverse audiences. For us as Laidlaw leadership and research scholars, this endeavour exemplifies the impact of combining technical expertise with cultural engagement, showcasing how leadership in action can drive meaningful contributions to society.

As we continue to finalise our projects with Ubani, we're excited about the possibilities ahead. We look forward to sharing our work with the community and contributing to the vibrant tapestry that is Tbilisi. In fact, our data mapping visualisations will be presented at an upcoming exhibition in Tbilisi.

Leadership

Finding our footing in Tbilisi was both exhilarating and challenging, but our project was more than just data and technology — it was about leadership in action, every step of the way. A key part of that leadership was collaboration and team working. Immersing ourselves in the city meant building relationships with people from different backgrounds and disciplines. We engaged with local university professors, spoke with young people in cafes, and frequented small local shops. These interactions gave us insights into Tbilisi's present culture and history, while also challenging us to step out of our comfort zones. Through these conversations, we learned how to connect across

boundaries and, in turn, gained local knowledge that shaped our project in ways we could not have initially imagined.

Self-knowledge and awareness were also central to our success. As a team of Laidlaw scholars, each of us brought unique skills and knowledge to the table. I soon realised that effective leadership required a deep understanding of not only my own strengths but also my limitations. Knowing when to step back and let someone else take the lead was crucial. This allowed us to make the most of our collective abilities and adapt to each other's working styles. For instance, while my technical knowledge was essential to the success of the project, I quickly recognised that my colleagues' cultural insights and historical knowledge were vital in ensuring the relevance of our work to the local community. True leadership, I found, requires honestly assessing your role and being open to learning from others. You do not need to have all the answer upfront; but you must create an environment where ideas can flourish, and where innovation and creativity are celebrated. Conceptualising a design on paper is one thing, but implementing it — especially in a complex, real-world environment — is quite another, and we must give space for that. Plans are only perfect until reality takes a look at them. But, thanks to the heartwarming support from Ubani and the people of Tbilisi, we found the confidence to dive into the challenge headfirst.

Reflections

Our intended impact is to highlight the need to balance social and environmental considerations in future planning. By making data accessible and interactive, we aim to spark conversations that promote sustainable urban development, offering a more nuanced understanding of how rapidly growing cities like Tbilisi can manage the pressures of change. It's not just about the data—it's about the stories that the data tells and the actions it inspires.

This wasn't just about pretty maps and cool 3D models (though we have those too!). By making the invisible visible — uncovering the connections between natural landscapes and social outcomes — we hoped to empower decision-makers, inspire residents, and offer a treasure trove of insights. Our mission was to inspire new understanding — one that could shape the future of urban planning, tourism, and local pride in Tbilisi.

What struck me most about this project was the tangible difference it could make. Our work was not just research; it was about giving something to the people of Tbilisi — we hoped to help residents see how their city was changing and evolving. Even more importantly, to show them that they can have voice in this transformation.