Decolonising Spatial Data Science for People, Place and Planet

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Important note
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Abstract

With developments in computational infrastructures, data science and AI have advanced, and in part replaced, several processes of engineering, design, and development in urban spaces. Former students and researchers from technical universities worldwide now work in all sectors of society and hold influential positions related to data science and AI. Yet, our education and research apparatus doesn't fully intersect with the reality of the world where data and digitisation is not only a means to a better future but can also be wielded to maintain structures of inequality, oppression and harm. In curriculums that are focussed around data analytics and machine learning, education material is dominated by western perspectives and largely developed by able-bodied cis-gendered men, centring singular thinking in how we collect, clean, map, model, interpret and evaluate data, and share or cite evidence. Those who are represented get to shape futures for themselves (educated, urban, young adults), while the rest of the identities and issues are shifted to the margins of society. When colonial forms of education at scale are combined with nationally funded Artificial Intelligence programs of research, it legitimises data extraction and unequal forms of participation in decision, labour, and society, further perpetuating damages to vulnerable communities. To make space for alternate social realities, lived experiences, datasets, methodologies, map-building practices, and frameworks, we have developed a decolonising process for data science education. Our approach combines inserting non-western geographical knowledge with transdisciplinary, community participation, and intersectional and reflexive thinking to deliver an open, interactive, and co-created textbook for geographic data science education at engineering universities. We envision this process and exemplary textbook to provide entry points for local initiatives and needs to start thinking about their decolonising practices with respect to data and AI based education and research.