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I study to answer the following questions: How has urban science been historically used to orchestrate, predict, and police public life, and how can the future of urban science be different if we care more about empowering marginalized groups in the city?

Now I am a Ph.D. student in Urban Information Systems at the Department of Urban Studies and Planning (DUSP) at the Massachusetts Institute of Technology (MIT), a research assistant and technical lead at the Data + Feminism Lab at MIT. In 2011, I co-founded the crowdfunding platform *Tumblbug* and demonstrated an alternative about the sustainability of the DIY movement. I was a research fellow at the Senseable City Lab at MIT, and I co-curated *Seoul Libre Maps* in Seoul Biennale of Architecture and Urbanism for realizing the vision of a citizen-organized data community. I hold a Master in City Planning at MIT DUSP, a BFA in Visual Communication Design from Kookmin University, and I studied at the School for Poetic Computation in New York City. My work has been recognized by Information is Beautiful Awards, MIT Museum, Seoul Biennale of Architecture and Urbanism, IEEE, Fast Co. Design, The Atlantic, CNN, The Guardian, Seoul Museum of Art and Wired, among others.

Education

2020—Present

Massachusetts Institute of Technology (MIT), Cambridge, MA.

Ph.D. in Urban Information Systems, *Department of Urban Studies and Planning*.

Advisor: Catherine D'Ignazio

2018—2020

Massachusetts Institute of Technology (MIT), Cambridge, MA.

Master in City Planning, *Department of Urban Studies and Planning*.

Thesis: Wesurvived.nyc: Participatory Mapping as a Political Act

Advisor: Catherine D'Ignazio

2006—2015

Kookmin University, Seoul, Korea.

Bachelor of Fine Arts. *Department of Visual Communication Design, College of Architecture and Design*.

Professional Experience

Sep 2021—Present

Graduate Teaching Assistant

Massachusetts Institute of Technology (MIT), MIT DUSP *Cambridge, MA.*

- Courses taught: Introduction to Spatial Analysis and GIS Laboratory, Workshop on Geographic Information Systems (GIS), Crowd Sourced City: Civic Tech Prototyping, Quantitative Reasoning and Statistical Methods for Planning I, Thesis Clinic (Masters in City Planning)

May 2020—Present

Research Assistant & Technical Lead, Data + Feminism Lab

Massachusetts Institute of Technology (MIT), MIT DUSP *Cambridge, MA.*

- Currently leading *Audit the Streets*, a national-scale database and public archive examining commemoration and contestation in the built environment in the United States. Under the supervision of Catherine D'Ignazio.

Sep 2019—May 2020

Member, MIT Visualization Group

Massachusetts Institute of Technology (MIT), MIT CSAIL *Cambridge, MA.*

- Designed and developed *Cartographers of North Korea*, which aims to discuss collaborative strategies for mapping contested territories. Under the supervision of Arvind Satyanarayan.

Sep 2018—May 2020

Graduate Research Assistant, Senseable City Laboratory

Massachusetts Institute of Technology (MIT), MIT DUSP *Cambridge, MA.*

- Designed and developed a data visualization for simulating the power of drive-by sensors, and designed and developed a data visualization for measuring urban segregation using cellphone data.

Jun 2019—Aug 2019

Research Intern

Nokia Bell Labs, Social Dynamics Group *Cambridge, United Kingdom.*

- Analyzed street names in cities (New York, Paris, Vienna) for quantifying culture of the cities, such as disproportion of naming genders. Under the supervision of Daniele Quercia.
- Led a health data visualization project which aims to demonstrate a new diagnosis model using social media data and Recurrent Neural Networks.

Jan 2017—May 2018

Data Visualization Specialist

Singapore-MIT Alliance for Research and Technology, Senseable City Laboratory *Singapore.*

Dec 2015—Dec 2016

Research Fellow & Data Visualization Specialist

Massachusetts Institute of Technology (MIT), Senseable City Laboratory *Cambridge, MA.*

- Worked with urban researchers to make urban data more communicative, visible and understandable. Under the supervision of Carlo Ratti.
- Produced an interactive map that aims to learn about the MIT community by specifically seeing where our colleagues and peers come from, by visualizing data from the MIT International Students Office.
- Was a lead data visualization designer on visualizing a metric by which to evaluate and compare urban canopy cover of world cities.
- Was a lead data visualization designer of multidisciplinary research team in collaboration with department of biology and civil engineering, working on finding algorithms to analyze the sewage network in Cambridge and producing various data visualizations that shows urban health pattern by sampling sewers.

May 2017—Dec 2017

Curator

2017 Seoul Biennale of Architecture and Urbanism *Seoul, Korea.*

- Curated Seoul Libre Maps with E Roon Kang. Commissioned by the 2017 Seoul Biennale of Architecture and Urbanism.
- Proposed ways to overcome social, technical, and policy constraints related to online mapping culture in Korea, by inviting artists to hold participatory workshops, to identify the new meaning of the map as a public good.

Jan 2016—Jun 2017

Designer & Developer, Codenamu

Creative Commons Korea (CCK) *Seoul, Korea.*

- Worked as a volunteer in a non-profit organization that aims to utilize open data and create unique data stories.
- Collaborated with Joongang Daily, one of the major media outlets in Korea, and produced several data journalism projects from urban housing issues to public officials' property.

Jan 2011—Dec 2013

Co-founder & Inside Director

Tumblbug inc *Seoul, Korea.*

- Co-founded a crowdfunding platform for creative projects, which is now the largest one in South Korea. (20M pledges as of 2017, Series Seed at 2012, Series A at 2015)
- Led a team of developers and designers of the platform and played a major role as a community manager, who tries to find new creators to be involved in the platform and encouraging them to use it.

Dec 2013—Dec 2014

Designer & Developer

Anyang Public Art Project (APAP) *Anyang, Korea.*

- Produced new visual identity system, website, app and catalog of Anyang Public Art Project, which is the biggest public art Biennale in South Korea. Collaborated with E Roon Kang.

Jan 2009—Jan 2011

Web Designer (Korea Navy Reserve)

Republic of Korea Navy Headquarters, Public Affairs Department *Gyeryong, Korea.*

- Worked as a web designer in public affairs department in Navy Headquarters.

2008

Designer & Developer

Randomwalks *Seoul, Korea.*

- Produced several data visualizations and participated exhibitions including Lift Conference Asia 09'.

2007—2008

Web Designer

The Center for Youth and Cultural Studies, Yonsei University *Seoul, Korea.*

- Worked as a web designer and designed *Ecosystem of Youth Education*.

Publications

- So, W. (2022). Which information matters? Measuring landlord assessment of tenant screening reports. *Housing Policy Debate*, 1–27.
- So, W., Lohia, P., Pimplikar, R., Hosoi, A. E., & D’Ignazio, C. (2022). Beyond fairness: Reparative algorithms to address historical injustices of housing discrimination in the us. *2022 ACM Conference on Fairness, Accountability, and Transparency*, 988–1004.
- Rahul Bhargava, Harini Suresh, Amelia Lee Dogan, Wonyoung So, Helena Suárez Val, Silvana Fumega and Catherine D’Ignazio. News as Data for Activists: a case study in femicide counterdata production. *Computation + Journalism 2022*
- D’Ignazio, C., Cruxen, I., Suárez Val, H., Martinez Cuba, A., Garcia-Montes, M., Fumega, S., Suresh, H., & So, W. Femicide and counterdata production: Activist efforts to monitor and challenge gender-related violence. *Patterns*, 3(7), 100530.
- Suresh, H., Movva, R., Dogan, A. L., Bhargava, R., Cruxen, I., Cuba, A. M., Taurino, G., So, W., & D’Ignazio, C. Towards Intersectional Feminist and Participatory ML: A Case Study in Supporting Femicide Counterdata Collection. *2022 ACM Conference on Fairness, Accountability, and Transparency*, 667–678.
- Erin McElroy, Wonyoung So (2021). **Landlord Tech in Covid-19 Times**. *Metropolitics*. <https://metropolitics.org/Landlord-Tech-in-Covid-19-Times.html>
- Erin McElroy, Wonyoung So, and Nicole Weber (2021). **Keeping an Eye on Landlord Tech**. *Shelterforce*. <https://shelterforce.org/2021/03/25/keeping-an-eye-on-landlord-tech/>
- Catherine D’Ignazio, Helena Suarez Val, Silvana Fumega, Harini Suresh, Isadora Cruxen, Wonyoung So, Maria De Los Angeles Martinez and Mariel Garcia-Montes (2020). **Femicide & Machine Learning: Detecting Gender-based Violence to Strengthen Civil Sector Activism**. MD4SG ‘20: 4th Workshop on Mechanism Design for Social Good, August 17-19, 2020.
- So, W., Bogucka, E. P., Scepanovic, S., Joglekar, S., Zhou, K., & Quercia, D. (2020). **Humane Visual AI: Telling the stories behind a medical condition**. *IEEE Transactions on Visualization and Computer Graphics*, 1–1.
- So, Wonyoung, & Duarte, F. (2020). **Cartographers of North Korea: Who are they and what are the technical, political, and social issues involved in mapping North Korea**. *Geoforum*, 110, 147–156.
- Bogucka, E. P., Constantinides, M., Aiello, L. M., Quercia, D., So, W., & Bancilhon, M. (2020). **Cartographic design of cultural maps**. *IEEE Computer Graphics and Applications*, 1–1. <https://doi.org/10.1109/MCG.2020.3026596>
- Wonyoung So et al. (2017). **Seoul Libre Maps**. *Imminent Commons: Live from Seoul*. Actar Publishers. New York, NY.
- Wonyoung So (2017). **Urban Data Visualization**. *May 2017 Landscape Architecture Korea, Seoul, Korea*.
- Wonyoung So, Achim Koh, E Roon Kang (2016). **Zeroboard, Easy-to-install BBS—Rough sketch for a techno-cultural maker history of the Korean internet**. *Open Net Research Paper Competition, Seoul, Korea*.
- Kang E Roon, So Wonyoung (2016). **multilingual.js: A Javascript Library for Multilingual Typesetting**. *LetterSeed 13: Technology and Typography*. Korean Society of Typography. Seoul, Korea.

Fellowships and Grants

- 2021. **Human Rights & Technology Fellowship**, MIT Center for International Studies
- 2021. **Harold Horowitz (1951) Student Research Fund**, School of Architecture and Planning, MIT
- 2020. **Presidential Doctoral Fellowship**, MIT
- 2018-2020. **Graduate Academic Fellowship**, Department of Urban Studies and Planning, MIT

Prizes

- 2019. **Winner in Student Category. Kantar Information is Beautiful Awards.** Cartographers of North Korea. *London, United Kingdom.*
- 2017. **Shortlist. Kantar Information is Beautiful Awards.** Treepedia. *London, United Kingdom.*
- 2017. **Finalist. Fast Co. Innovation by Design Awards 2017, Graphic Design and Data Visualization.** Treepedia. *New York, NY.*
- 2016. **Research Grant (Third Grade). Open Net Research Paper Competition.** Zeroboard, Easy-to-install BBS—Rough sketch for a techno-cultural maker history of the Korean internet. *Seoul, Korea.*
- 2015. **Longlist. Kantar Information is Beautiful Awards.** Underworlds. *London, United Kingdom.*
- 2012. **Finalist. Adobe Design Achievement Awards, Browser Based Design.** RENT. *Toronto, Canada.*
- 2009. **Semi-Finalist. Adobe Design Achievement Awards, Application Development.** Drawstories. *New York, NY.*
- 2008. **Finalist. Adobe Design Achievement Awards, Designer-developer Collaboration.** TypeSQL. *New York, NY.*

Selected Talks

- Oct 2019. **Cartographers of North Korea. IEEE VIS Arts Program: Artist Talk.** *Vancouver Convention Center. Vancouver, BC, Canada.*
- Oct 2017. **Treepedia: for civically minded people who care about green city. IEEE VIS Arts Program: Artist Talk.** *Phoenix Convention Center. Phoenix, AZ.*
- May 2017. **Urban Data Visualization: Intervening between data acquisition and communication. SMART FM Seminar.** *Singapore-MIT Alliance for Research and Technology. Singapore.*
- Jun 2017. **Open Source Map and Seoul: History of Technology, Commons and Open Source. 2017 Seoul Biennale of Architecture and Urbanism.** *Dongdaemun Design Plaza. Seoul, Korea.*
- Oct 2016. **(Individual)-[Collaboration]-(Individual)=Creative Communities. Boston Tech Poetics.** *Boston, MA.*
- Jun 2016. **Creative Communities: South Korea Case Study. Boston Civic Media. Microsoft NERD Center,** *Cambridge, MA.*

Exhibition and Performances

- 2019. **Cartographers of North Korea, IEEE VIS '19 Arts Program Exhibition Track.** *Vancouver Convention Centre. Vancouver, BC, Canada.*
- 2019. **Balancing Art: Urbanism & Emerging Technologies.** *Boston Society of Architects/AIA. Boston, MA.*

- 2019. **From Point A to Point B. Data Through Design Exhibition.** *The New Lab. Brooklyn, NY.*
- 2017. **Treepedia & Underworlds. Big Bang Data.** *MIT Museum. Cambridge, MA.*
- 2017. **Treepedia, IEEE VIS '17 Arts Program Exhibition Track.** *Phoenix Convention Center. Phoenix, AZ.*
- 2017. **Underworlds in Seoul. 2017 Seoul Biennale of Architecture and Urbanism.**
Donuimoon Museum Village. Seoul, Korea.
- 2017. **Seoul Libre Maps. 2017 Seoul Biennale of Architecture and Urbanism.**
Dongdaemun Design Plaza. Seoul, Korea.
- 2016. **International Water Banking Association. The Chronicles of Prepper Part 1.**
Dongdaemun Design Plaza. Seoul, Korea.
- 2016. **Korean Internet Tour Guide. SeMA Biennale Mediacity Seoul 2016.**
Seoul Museum of Art. Seoul, Korea.
- 2016. **Small World: Graphic Designers. Graphic Design, 2005-2015, Seoul.**
Ilmin Museum of Art. Seoul, Korea.
- 2014. **Water Conflict Map 3000 BC-2014. Waterscapes: Politics of Water.**
Kumho Museum of Art. Seoul, Korea.
- 2012. **VJing Artworks. Younha Comeback Concert [RUN].** *Lotte Art Hall. Busan, Korea.*
- 2008. **VJing Artworks. Jaehyung Jung [Le Voyageur for Jacqueline].** *Baekam Art hall, Seoul, Korea.*
- 2008. **VJing Artworks, Peppertones Concert.** *Ewha High School Centennial Memorial Hall. Seoul, Korea.*
- 2008. **Filtering & Connecting, Bonding Company. Lift Asia '09.** *ICC Jeju Convention Center. Jeju, Korea.*
- 2007. **ccRealMixer. People Art Technology.** *Namsan Drama Center. Seoul, Korea.*

Selected Skills

- **Programming Languages:** Javascript (+6yrs, ES2016), Ruby (+6yrs). Python (+2yrs)
- **Data Visualization:** Deep knowledge of how to produce meaningful visualization using React, D3 and Three.js.
- **Web Development:** Fluent with open source database and web server including Ruby on Rails, PostgreSQL, MySQL, Nginx and Ubuntu Linux.
- **GIS and Spatial Analysis:** Knowledge of web mapping and open source technology including Mapbox, OpenStreetMap, QGIS, PostGIS and Turf.js.
- **Languages:** Korean and English.