

Chaewon Ahn

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Appointment

Assistant Professor, Department of Architecture, NUS 2022. 7 - current
Assistant Professor, Urban Studies, Yale-NUS College 2021. 7 - current

Education

Massachusetts Institute of Technology (MIT) 2016.9 – 2020. 6

PhD, Department of Urban Studies and Planning

- Title: Manufacturing Social Capital - Social networks through civic innovation initiatives in urban manufacturing clusters under development pressure in Seoul
- Advisor: Sarah Williams (MIT)
- Committee: Justin Steil (MIT), Elizabeth Reynolds (MIT)
- City Design and Development & Urban Information Systems group

Massachusetts Institute of Technology (MIT) 2013. 9 - 2015. 6

*Master of science in Architecture studies (SMArchS) in Architecture and Urbanism,
Department of Architecture*

Korea National University of Arts (KARTS) 2006. 3 - 2012. 2

School of Visual Arts, Department of Architecture, RIBA Part 2 accredited
Bachelor of Architecture (BArch)

École Spéciale d'Architecture (ESA) 2009. 8 - 2009. 12

Exchange program, one semester

Teaching Experience

Community Data Lab | Master of Urban Planning program, Department of Architecture, NUS 2024

Instructor

- Data collection and web based data visualization to represent quantitative and crowdsourced urban data
- Lecture, lab and final website project

Quantitative methods for planners | Master of Urban Planning program, Department of Architecture, NUS 2023, 2024

Instructor

- Core methods course for the Master of Urban Planning students
- Lecture, lab and final project for applicable skill building in quantitative research methods

Smart Cities: History of urban data in urban planning | Urban studies, Yale-NUS College 2021 - 2024

Instructor

- Seminar on the history of urban data in urban planning from the social surveys in the 1860s to Smart Cities and AI.
- Final ethnography research paper on a chosen urban technology
- Module based capstone course

Geospatial and Demographic Methods (GIS) | Urban Studies & Mathematics Computer Science, Yale-NUS College 2021 - 2024

Instructor

- Urban studies major elective as one of the methods classes
- Lecture, lab and final project to develop a reflexive practice in GIS

Introduction to QGIS | Department of Architecture, University of Seoul 2020. 9

Instructor

- Taught a 4-session course on QGIS for the fifth-year architectural design studio
- Covered basic concepts, projection systems, basic visualizations, tile maps, data handling and joins, geocoding, foundation for spatial analysis, grids, map algebra, network analysis.

QGIS Workshop at the <Seoul, Smart> | Beta City Center, University of Seoul 2020. 8

Instructor

- A one-day introductory QGIS course at the <Seoul, Smart> round table

11.001 Introduction to Urban Design and Development | Department of Urban Studies and Planning, MIT 2018 Fall

Teaching Assistant to Prof. Lawrence Vale

- Contributed in the curriculum building of the urban data and smart cities literature
- Structured one of the main assignments to investigate urban form using qualitative observations and two of the provided geospatial data in two selected neighborhoods under one of the themes of crime / mobility / environmental quality / neighborhood affordability
- Graded student assignments, and mentored students during office hours

11.205 Introduction to Spatial Analysis | Department of Urban Studies and Planning, MIT 2017 Fall (Half Semester)

Teaching Assistant to Prof. Sarah Williams

- Assisted two lab sessions per week
- Graded weekly assignments, and mentored students during office hours
- Contributed to the lab session and assignment material by testing them

11.520 Workshop on Geographic Information Systems | Department of Urban Studies and Planning, MIT 2017 Fall (Half Semester)

Teaching Assistant to Prof. Sarah Williams

- Assisted two lab sessions per week
- Mentored students during office hours from research design to presentation of the final GIS group project

Creating AXONOGRAPHY: From 2D to spatial sensory exhibition design 2017. 1
| Department of Architecture, MIT

Instructor. Co-instructed with Yihyun Lim, Bumjin Kim, Joshua Choi

- Designed and taught a 4 week-long Independent Activity Period (IAP) course on axonometric interpretations of everyday life

Research Interest

- Public spaces, participatory urban planning processes, governance systems
- Urban design politics
- GIS, spatial statistics, big data, social network analysis
- Sensors, participatory data collection
- Data Visualization

- History and theory of urban data, urban models

Research Projects

- Digital Twin Models: A Comparative Approach to Global Methods** | 2023. 1 – 2024. 6
National University of Singapore– Cornell University, NUS-Cornell
Global Collaboration Award | Co-PI with Farzin Lofti-Jam (Cornell Architecture)
- Follow the code: Urban Models and Resilient Future** | NUS HSS 2022.8 – 2024. 7
Seed Fund | PI with Co-PIs Connor Graham, Jiat Hwee Chang
- Manufacturing Social Capital | Dissertation | Advisor: Sarah Williams** 2019.7 – 2020.5
Examining the efficacy of new innovation district projects that include civic engagement programs to connect manufacturers to entrepreneurs, designers and makers in their ‘Maker city’, utilizing social network analysis methods complemented with interviews and ethnographic fieldwork.
- The printing network seen through sensors | Sponsored by the City of Seoul** 2020. 7 – 2021.3
Developing a sensor system to track makeshift motorcycles that transport paper and printed products in the printing district of Seoul, to collect network data of how printing jobs of small printing manufacturers are interlinked through printing jobs.
- Sewoon Education Governance | Advisor: Jie-Eun Hwang** 2020.1 – 2020. 3
Analyzing 508 educational governance programs that are comprised of 1,122 events between 2015 to 2020, which include workshops, lectures, tutorials, exhibitions to evaluate the educational community in the Sewoon area as a community of practice and transmission of tacit knowledge.
- Online platform for creative urban manufacturing | Formali** 2020.1 – 2020. 3
Analyzed the typologies of operations, and workflow of the Sewoon technology connection office which introduces makers, entrepreneurs to fabricators in the area and contributed to the conception of an online platform that intermediates these new collaborations. Commissioned by the City of Seoul.
- Sewoon Urban Manufacturing Survey | Seoul Metropolitan Government** 2019. – 2020. 1
Understanding the state of manufacturing in the Sewoon urban manufacturing district in the center of Seoul facing development pressure. The results were shared with the city and the firm commissioned to generate the new masterplan and published in August 2020.
- Bench Mark | Civic Data Design Lab, MIT | Advisor: Sarah Williams** 2019. 7 – 2019. 10
Measuring social interaction in public space through sensor laden smart furniture. Paper published in Environment and Planning B.
- The Place for Decent Housing | DUSP, MIT | Advisor: Sarah Williams** 2017. 9 - 2018.1
Measuring spatial segregation of the low-income population and assessing the role of affordable housing policies in Chengdu, China using social housing data and real estate transaction data. Presented in ACSP 2017.
- Cross Cultural Comparison of Car Pride | JTL urban mobility lab, MIT | Advisor: Jinhua Zhao** 2016. 9 – 2017. 6

Spatial analysis on biases towards car usage, car ownership and bus usage in New York and Houston. Presented at the AAG Annual meeting in Boston 2017 April.

Car as a sensing platform | Senseable City lab, MIT | Advisor: Carlo Ratti 2016. 9 - 2017. 6

Analyzing sensor values collected through vehicles to understand the relationship between the built environment, weather conditions and the driving behavior.

The new gay index | Senseable City lab, MIT | Advisor: Carlo Ratti 2015. 9 - 2016. 6

Spatial analysis on dating app data to study the distribution, mobility and segregation of the gay population in US.

SMArchS Graduate Thesis | Department of Architecture, MIT 2015. 9 - 2016. 6

Developing a methodology to read social space through social network service data. Collected Instagram location data with Python, analysis in GIS in correlation to Census, Boston GIS data.

MIT Campus material flow analysis | Urban Metabolism lab, MIT | Advisor: John Fernandez 2014. 9 - 2015. 6

Literature review, data collection, and data analysis to apply material flow analysis in the MIT context. Collaboration with the Office of sustainability at MIT.

2014. 6 - 7

Research Appointments

Asia Research Institute | STS cluster 2022 -

Digital Twin Sewoon | Seoul Business Agency | Data visualization specialist 2019.11 – 2020. 1

Seoul Metropolitan Government, Historic City Regeneration Division | Seoul, South Korea | Project Manager ‘Sewoon Urban Manufacturing Survey’ 2019. 7 – 2019. 10

Civic Data Design Lab | Department of Urban Studies and Planning, MIT 2017. 8 – 2019. 6

Center for Territorial Intelligence | Universidad Adolfo Ibañez, Santiago, Chile | Visiting researcher 2018. 7 – 2018. 8

MIT Election Science and Data Lab | Department political Science, MIT | Research Assistant 2018. 2 – 2018.6

JTL Urban Mobility Lab | Department of Urban Studies and Planning, MIT | Research Assistant 2016. 9 - 2017. 6

Senseable City Lab | Department of Urban Studies and Planning, MIT 2015.9 – 2016. 7

Civic Data Design Lab | Department of Urban Studies and Planning, MIT | Research Assistant 2015.7 - 8

Urban Metabolism Lab | Department of Architecture, MIT | Research Assistant 2014. 6 - 7

Data Visualization and Web Design

Qualitative Maps of Yale-NUS College | PI: Chaewon Ahn 2022.6

A collection of qualitative maps of the Yale-NUS campus drawn by Yale-NUS students.

<https://qmaps.herokuapp.com>

Digital Twin Seoul | Seoul Business Agency | PI: Jie-Eun Hwang 2019.11 – 2020.1

Interactive website that visualizes the network of retail and manufacturing businesses in the Sewoon area based on the products and processes they treat. Coupled with a

showcase websites of new design products that were made in collaboration with businesses in the network. Role: Web design, CSS, HTML, D3

<http://www.dtsewoon.kr/store>

The Observatory of Conflict | Centro de Inteligencia Territorial, Universidad Adolfo Ibañez 2018. 7 – 2018. 8

Interactive visualization of the geographical patterns of protests, their involved actors and demands of protests in Chile. Role: Website design, CSS, HTML, Mapbox, D3

Election Landscape of the United States | MIT Election Science and Data Lab 2018. 2 - 2018.6

Web based data visualization to display and share the data on variant implementation of election policies in the US. Role: Website design, CSS, HTML, Mapbox, D3

Flocktracker | Department of Urban Studies and Planning | Advisor: Christopher Zegras 2016. 9 - 2016. 11

Website for the data collection platform Flocktracker. Role: Web design, CSS, HTML

Place-based Collaboration | Senseable City lab, MIT | Advisor: Carlo Ratti 2015. 9 - 2016. 6

Visualizing collaborations within the MIT community seen through paper and patent records. Role: Data Visualization, Video editing using after-effects

Monitour | Senseable City lab, MIT | Advisor: Carlo Ratti 2016. 9 – 2017. 6

Visualizing international electronic waste routes departing from the United States tracked through small GPS devices. Task: Website design, CSS, HTML

<http://senseable.mit.edu/monitour/>

Light Traffic | Senseable City lab, MIT | Advisor: Carlo Ratti

Reimagining the traffic light system for autonomous vehicles. Role: Diagrams, Website design, CSS, HTML

<http://senseable.mit.edu/light-traffic/>

Digital Matatus Website | Civic Data Design lab, MIT | Advisor: Sarah Williams 2015. 6 – 2015. 8

Web design of the Digital Matatus website. Role: Website design, CSS, HTML, JavaScript

<http://www.digitalmatatus.com/>

Crowd Sourced City Website | Civic Data Design lab, MIT | Advisor: Sarah Williams 2015. 9 - 2016. 6

Web design of the Crowd Sourced City Class website. Role: Web design, CSS, HTML, JavaScript

<http://www.crowdsourcedcity.com/>

Story Board | Crowd Sourced City Class, MIT | Advisor: Sarah Williams | Client: ERASE RACISM 2015. 3 – 2015. 6

Website that crowdsources stories on structural racism. Role: Website design, CSS, HTML, JavaScript, IFTTT, Fusion Tables

Publications

Ahn, C., Lotfi-Jam, F., Graham, C., Bunnell, T., Marvin, S., (2024) “A “Critical Urban Informatics Approach” to Enhancing Digital Twins”, Under review
Nature Cities

Ahn, C. , Lotfi-Jam, (2023) “ DECODING THE BLACK BOX: ETHICAL FRAMEWORKS FOR URBAN DIGITAL TWIN MODELS ”, Journal of Urban Planning and Education (JPER).	Under review
Ahn, C. , Ignaccolo, C. and Salazar-Miranda, A. (2022) 'Measuring the City: The Power of Urban Metrics', Projections. Edited by C. Ahn, C. Ignaccolo, and A. Salazar-Miranda, Projections 16. Measuring the City: The Power of Urban Metrics (MIT Press). Available at: https://projections.pubpub.org/pub/xusawg1f .	2022
Ahn, C. (2021). Manufacturing Social Capital: Social Networks through Civic Innovation Initiatives (Doctoral dissertation, Massachusetts Institute of Technology).	2021
Kang, W., Hwang, J., Shim, H., Ahn, C. (2020) Sewoon Urban Manufacturing Survey . Seoul, South Korea: Seoul Metropolitan government.	2020
Williams, S., Ahn, C. Gunc, H., Ozgirin, E., Pearce, M., Xiong, Z. (2019). Evaluating sensors for the measurement of public life: A future in image processing . Environment and Planning B: Urban Analytics and City Science, DOI: 10.1177/2399808319852636	2019
Massaro, E., Ahn, C., Ratti, C., Santi, P., Stahlmann, R., Lamprecht, A., ... & Huber, M. (2016). The car as an ambient sensing platform [point of view] . Proceedings of the IEEE, 105(1), 3-7.	2016
Ahn, C. (2015). Ma(i)cro visions : utilizing social network service data for a transformational process of urban social spaces (S.M., Massachusetts Institute of Technology, Department of Architecture). Retrieved from http://dspace.mit.edu/handle/1721.1/7582	2015
SENSEable City Guide to Pune, Wood Buffalo & Dallas MIT School of Architecture and Planning *	2014. 8
KIA Convention and Exhibition 'Creative community' Korean Institute of Architects *	2011. 11. 11
Adaptive re-use of camp Hialeah DOCOMOMO-KOREA *	2011. 9.30

*contribution = **

Media Appearance

The reason why the CEO of a 45-year-old engine company visited the 65-year-old Cheonggyecheon foundry Donga Science, 2020.8.22 http://dongascience.donga.com/news.php?idx=39107	2020.8
2020 Sewoon Global Forum: Urban Manufacturing, Now Again (1) Seoul Space magazine, vol. 663 https://vmSPACE.com/report/report_view.html?base_seq=MTExOQ==	2020. 8
"The future of Busan; What is the Future of Camp Hialeah?" Space magazine, vol. 524	2011. 7

"**ZOOM IN: Competition 8th DOCOMOMO-Korea Design Competition**" | ELA magazine, vol. 297 2011. 7

"**Docomomo competition; adaptive re-use of camp Hialeah**" | WIDE architecture report magazine, vol. 22 2011. 7

Professional Experience

KIOHUN architects and associates | Seoul, Korea | *Intern Architect* 2012. 11 – 2013. 4
Pantech Headquarter Renovation proposal | Seoul, Korea 2010. 12
Architectural Design Units UA | Seoul, Korea | *Intern Architect* 2010. 2
Ateliers Lion Seoul | Seoul, Korea | *Intern Architect* 2009. 1
KIOHUN architects and associates | Seoul, Korea | *Intern Architect* 2008. 12

Exhibitions and Presentations

What are Smart Cities? | Asian Undergraduate Symposium 2024 | Singapore 2024. 7. 5

The Smart City: Songdo, Masdar, Toronto and Singapore | LKYSPP guest lecture | Singapore 2024. 6.13

2024. 4. 20

Decoding the Black Box: Ethical Frameworks for Urban Digital Twin Models | Reflexive Urban Models session (Chair: Chaewon Ahn & Farzin Lotfi-Jam) | AAG Annual Meeting 2024 | Honolulu, USA

Mirrors and Games: Digital Twin Models and the Metaverse | IDEAS Festival 2024 | Singapore 2024. 3. 26

Smart Urban Futures and AI | MUP Urban design theory and praxis guest lecture | Singapore 2024. 3. 25

Modelling Smart Urban Futures in Asia | Tembusu College – Singapore as a model city guest lecture | Singapore 2023. 10. 26

Smart Cities, Civic Tech, and Urban Digital Twins: A Critical STS Perspective | DesCartes Week 2023 | Singapore 2023. 10. 5

(Artificial) Intelligence | SMU-Microsoft Asian Dialogues: AI Accountability in Smart Cities Workshop | Singapore 2023.4.24

In and around the blackbox | Real Time: symposium on the architecture of packets, pixels, and neurons | Ithaca, USA (Cornell University) 2023.4.13

Follow the Code: Urban Models and Resilient Future | 4S, Science in the City Panel | Puebla, Mexico 2022.12.8

Manufacturing Social Capital: Visualizing Social Networks Through Civic Innovation Initiatives in Urban Manufacturing Clusters Under Development Pressure | ACSP 60th Annual Conference, Online 2020.11.4

- Manufacturing Social Capital** | MLA Studio, National University of Singapore 2020.9.4
Presented dissertation research at the LA5701 MLA Studio 'Pandemic Disruptions'
- Sewoon Global Forum 'Local-Recall' Urban Manufacturing, Now Again** | Seoul 2020.6.18
Presented the Sewoon manufacturing survey as part of a conversation of three cities of Seoul, NYC, and Brussels, about the challenges in urban manufacturing in the COVID19 context. The talk is available on Youtube: <https://youtu.be/hUclNk6G6FE>
- Data Activism and Urban Planning: Grassroots approach** | 'Ecology of Things' cross studio, University of Seoul 2020.5.12
Introductory lecture on the history and positions around bottom-up civic tech on sensors, map making, and urban planning.
- HCI@ KAIST seminar** | School of Computing, KAIST, Daejeon 2020.1.7
Presented the projects at the Senseable City lab, Civic Data Design Lab and my dissertation research at the Human Computer Interaction seminar at the KAIST Interaction Lab
- Mapping Social Systems** | Department of Civil and Environmental Engineering, KAIST, Daejeon 2019.12.2
Presented the projects at the Senseable City lab, Civic Data Design Lab and my dissertation research at the Maturepolis Lab Seminar Series
- NextStop** | THE ROAD AHEAD: REIMAGINING MOBILITY, Cooper Hewitt the Smithsonian Design Museum, NYC 2018.12.14 – 2019.3.31
Interactive analog and digital experience aimed at eliciting visitors' perceptions of how future mobility options will impact societal transit equity, access, and utilization.
- The Place for Decent Housing: The Impact of Affordable Housing Provision on the Spatial Segregation of the Urban Poor in Chengdu, China** | ACSP 57th Annual Conference, Denver, Colorado 2017.10.12
- Ghost Cities of China** | 2017 SEOUL BIENNALE OF ARCHITECTURE AND URBANISM 2017.8.2 – 2017.11.5
Interactive exhibition on the Ghost Cities of China research project at the Civic Data Design Lab. Design, fabrication and installation of the exhibition booth.
- Geography of 'Car Pride' in New York and Houston** | 2017 AAG annual meeting, Boston 2016.5.4
- DATA VISUALIZATION talk** | MIT Department of Urban Planning, Cambridge, MA 2015. 3 – 2015. 6
Introduced the role and data visualization processes in the SENSEable City Lab. Collaborator: Paul Buisset
- RENEWABLE FUTURES 2015 conference** | Riga, Latvia 2015.10.8
Presented master's thesis "Ma(i)cro Visions" in "Mapping Complexity and Post-media Architecture" session organized by Lev Manovich.
- 2014 Howard T. Fisher Prize for Excellence in GIS** | Harvard University 2014.5.19
Exhibited "Mapping Boston's Public Space, Evidence from 60,000 Instagram Posts". Collaborator: Yunjie Li

The 8th Collections of Excellent Graduation Theses | Choongang university R&D center, Seoul, Korea 2012.4.28
Exhibited "Forming community through a network of places" in poster session

UA Graduation Exhibition | Korea National univ. of Arts, Department of Architecture 2011.12.13
BArch graduation exhibition. Presented Model and panel for "Individual Community"

2011 KIA Exhibition | Mokdong Korean Center of art, Seoul, Korea 2011.11.11
Exhibited "Individual community" at student session of the annual exhibition of Korean Institute of Architects

The 15th Hongik Street art Exhibition 'High & Low' | Hongik University, Seoul, Korea 2007.9.12
Installed temporary urban furniture. Collaborator: Jiyeon Gu, Yeonjoo Kang, Yoona Choi, Minji Kim

Honors and Awards

CIS Summer Study Grant | MIT Center for International Studies 2020.6

Department tuition Fellowship year 2 | Massachusetts Institute of Technology 2015.6

Department tuition Fellowship year 1 | Massachusetts Institute of Technology 2013.9

Graduate Fellowship Award (Declined) | Cornell University, MArch 2 2013.9

Second Prize | The 8th Collections of Excellent Graduation Theses competition | Architectural Institute of Korea 2012. 4. 28

Selected work | The 30th KIA Convention Design competition 'Creative community' | Architectural Institute of Korea 2011. 11. 12

The Grand Prize | The 8th DOCOMOMO_Korea Design Competition | Docomomo Korea 2011. 6. 2

Department tuition scholarship (highest level) | Korea National University of Arts 2011. 3

Department tuition scholarship (second level) | Korea National University of Arts 2010. 3

Big tree scholarship | design tour in Europe for selected students | Changjo Architects INC. 2008. 7. 1

Department tuition scholarship (highest level) | Korea National University of Arts 2008. 9

Department tuition scholarship (highest level) | Korea National University of Arts 2007. 9

Admission scholarship (highest level) | Korea National University of Arts 2006. 3

Skills

ArcGIS, QGIS, Rhinoceros, Grasshopper, Adobe Suite (Photoshop, Illustrator, Indesign, After Effect), HTML, CSS, R, D3, Javascript, Mapbox, Leaflet, Python, Arduino