curriculum vitae

kyle steinfeld
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born: Jacksonville, Florida, USA — Dec, 1975

education

Masters of Architecture — May 01 - Jun 04
Massachusetts Institute of Technology

Bachelors of Design in Architecture — Aug 93 - Jun 99
University of Florida, with honors

academic experience

Associate Professor, University of California, Berkeley — Aug 10 - Present
Director, Studio One Degree Program 2014-2015
Associate Director, Master of Design (MDes) Program 2019-2020
***see below for a full listing of courses instructed at UC Berkeley.*

Visiting Instructor, Pratt Institute — Sep 06 - Aug 10
Director, Digital Futures Consultant Group

Visiting Instructor, Cornell University — Sep 07 - May 08

Researcher, Technische Universiteit Delft — Apr 06 - Apr 07

Adjunct Professor, Stevens Institute of Technology — Jan 06 - Mar 06

Adjunct Professor, New York Institute of Technology — Jan 00 - May 01

professional experience

Digital Design Consultant, Skidmore, Owings, and Merrill — Aug 08 - Dec 08
Lead Researcher, SOM / Sci Arc Applied Studies Seminar

Designer, Acconci Studio — May 07 - Aug 07

Digital Design Researcher, Kohn Pedersen Fox Associates — Mar 05 - Mar 06

Designer, TEN Arquitectos — Sep 04 - Feb 05

Project Designer, White Noise - White Light — Dec 03 - Aug 04

Designer, Diller + Scofidio — May 03 - Nov 03

Designer, Acconci Studio — Apr 00 - May 01

publications

books

PB-02 **Geometric Computation** — 2018
Vol 1: Foundations for Design
Joy Ko, Kyle Steinfeld
Routledge

book chapters and special issues

PB-03 **Fresh Eyes** — Jun 19
A Framework for the Application of Machine Learning to Generative Architectural Design
Kyle Steinfeld, Kat Park, Adam Menges, Samantha Walker
*** This book constitutes 34 selected (out of 194 accepted) papers of the 18th CAAD Futures Conference, held in Daejeon, Republic of Korea.*
in: **Computer-Aided Architectural Design. 'Hello, Culture': 18th International Conference, CAAD Futures 2019, Daejeon, Republic of Korea, June 26-28, 2019, Selected Papers**
edited by: Ji-Hyun Lee
Springer

PB-01 **The Data Made Me Do It** Oct 14
Direct, Deferred, and Dissolved Authorship and the Architecture of the Crowd
Kyle Steinfeld, Levon Fox, Alex Spatzier
in: **Paradigms in Computing: Making, Machines, and Models for Design Agency in Architecture**
edited by: M Ibanez, D Gerber
eVolo

journal articles

JA-01 **Studies in Small Scale Data** Jan 18
Three Case Studies on Describing Individuals' Spatial Behaviour in Cities
Lynnette Widder, Jessie Braden, Joy Ko, Kyle Steinfeld
in: **EAI Endorsed Transactions on Internet of Things**
edited by: Der Jiunn Deng, Claudio Enrico Palazzi and Yuyu Yin

conference papers (peer-review)

PC-10 **Necessary Tension (forthcoming)** Sep 19
A dual-evaluation generative design method for tension net structures
Matt Turlock and Kyle Steinfeld
in: **Impact: Design with All Senses,** Proceedings of Design Modelling Symposium 2019

PC-09 **Dreams May Come** Nov 17
A guide to future research at the intersection of ML and architectural design tools
Kyle Steinfeld
in: **Disciplines & Disruption,** Proceedings of the 37th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)

PC-08 **Ivy** Nov 17
Progress in developing practical applications for a weighted-mesh representation for use in generative architectural design
Andrei Nejur, Kyle Steinfeld
in: **Disciplines & Disruption,** Proceedings of the 37th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)

PC-07 **Ivy** Oct 16
Bringing a weighted-mesh representation to bear on generative architectural design applications
Andrei Nejur, Kyle Steinfeld
in: **Posthuman Frontiers: Data, Designers, and Cognitive Machines,** Proceedings of the 36th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)

PC-06 **Imperative, Functional, Object-Oriented** Oct 14
An alternative ontology of programmatic paradigms for design
Kyle Steinfeld, Carlos Sandoval
in: **Design Agency,** Proceedings of the 34th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)

PC-05 **Dhour** Oct 13
A bioclimatic information design prototyping toolkit
Kyle Steinfeld, Brendon Levitt
in: **Adaptive Architecture,** Proceedings of the 32nd Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA 2013)

PC-04 **Decodes** May 13
A platform-independent computational geometry environment
Kyle Steinfeld, Joy Ko
in: **Open Systems,** Proceedings of the 18th International Conference on Computer-Aided Architectural Design Research in Asia (CAADRIA 2013)

PC-03 **Housing Agency System (HAS)** Apr 13
Multi-Criteria Satisficing & Mass-Customization of Homes
Michael Bergin, Kyle Steinfeld
in: **Offsite: Theory and Practice of Architectural Production,** Proceedings of Fall Conference of the Association of Collegiate Schools of Architecture (ACSA 2012)

PC-02 **Open Graphic Evaluative Frameworks** Sep 12
A climate analysis tool and web-based weather data visualization platform
Kyle Steinfeld, Stefano Schiavon, Dustin Moon
in: **Digital Physicality - Physical Digitality,** Proceedings of the 30th International Conference on Education and research in Computer Aided Architectural Design in Europe (eCAADe 2012)

PC-01 **Situated Bioclimatic Information Design** Oct 10
A new approach to the processing and visualization of climate data
Kyle Steinfeld, Pravin Bhiwapurkar, Anna Dyson, Jason Vollen
in: **LIFE in:formation, On Responsive Information and Variations in Architecture,** Proceedings of the 29th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA 2010)

PC-00 **Constraints Driven Design of a Surface Inflatable Habitat Module** Jul 06
Georgi Petrov, Constance M. Adams, Kyle Steinfeld, and Dmitri Jajich
in: **2006 International Conference On Environmental Systems (ICES),** Proceedings of ICES

invited publications

PIV-03 **Data Agency** Oct 14
Kyle Steinfeld
in: **Proceedings of the 34th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)**
edited by: J Sanchez, A Huang, D Gerber

PIV-02 **Public, Private, Protected** Sep 13
Encapsulation and the Disempowerment of the Digital Architect
Kyle Steinfeld
in: **Room One Thousand Fall/Spring 2013 Edition: Technology and the Box**
edited by: P Maitland

PIV-01 **Synthetic Digital Ecologies** Oct 12
Mark Cabrinha, Jason Kelly Johnson, and Kyle Steinfeld
in: **Proceedings of the 32nd Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)**
*** Introductory essay for ACADIA 2012 conference proceedings.*

research posters

POS-01 **Spatial Behaviors of Individuals in Cities** May 16
Three Case Studies in Data Tracking and Scaling
Lynnette Widder, Joy Ko, Jessie Braden, Kyle Steinfeld
at: **Second International Conference on the Internet of Things in Urban Space**
*** Recieved the award for Best Poster at the 2016 Conference.*

exhibitions

EX-03 **“Not Far From Home”, NeurIPS 2018 Machine Learning for Creativity and Design** Dec 18
Montreal Canada
Three-dimensional architectural massings for single-family homes are generated by a generative adversarial network. This GAN is trained on a small dataset of three-dimensional models of homes falling into seventeen architectural styles, and that are represented as multi-view heightfield images. A process is developed for converting from 3d CAD model to 2d tiled heightfield image, and from the 2d heightfield images generated by GAN back to three-dimensions in voxel format.
www.aiartonline.com/design/kyle-steinfeld/

EX-02 **“Death Valley”, NeurIPS 2017 Machine Learning for Creativity and Design** Dec 17
Long Beach CA
Using the pix2pix model ported to tensorflow, we developed a process for relating depthmaps extracted from Google Street View panoramas with the corresponding photographic information. A number of separate models were produced using limited geographic areas of selected cites. With these depthmap-to-panoramic cityscape models trained, we are able to generate new images from unrelated depthmaps which resembled photographic images of the selected cities. This is demonstrated using a javascript app (not currently online) and documented in still images and a series of videos.
nips4creativity.com/art/kyle-steinfeld/

EX-01 **“Scripted By Purpose”, FUEL Gallery** Sep 07
Philadelphia, PA
Displayed two original works at this exhibit of “explicit and encoded processes within design”, curated by Marc Fornes (theverymany) and Skylar Tibbits (Sjet)
scriptedbypurpose.wordpress.com/participants/kyle-steinfeld/

digital tools

In the subject area of Design Computation, the development of innovative design methods through the authoring of free and open-source software (FOSS) is an important means by which contributions to the discipline are made. For this reason, software is regarded as an important medium of creative work. Listed below are the research projects related to the development of design tools that have served to organize many of my other professional activities. These include the publication of research results, the securing of financial support for research, the forging of professional partnerships, and the development of teaching and pedagogy.

CW-09 **Fresh Eyes for Grasshopper** May 18
Kyle Steinfeld
A toolkit for connecting parametric models with classification machine learning models.

CW-08 **Drawing with Bots** May 17
Kyle Steinfeld and Hao Zheng
A series of experiments that explore human-computer collaborative drawing.
drawing.ksteinfe.com

CW-07 **Ivy** Jun 16
Andrei Nejur, Kyle Steinfeld
A mesh analysis and segmentation toolkit that facilitates the fabrication of discrete three-dimensional forms. This toolkit has been the subject of a number of professional workshops, including most recently one at Meshworks Berlin (www.bedarf.cc/portfolio/meshworks-berlin).
www.food4rhino.com/project/ivy?ufh

CW-04 **Decloud** Aug 14 - Jul 16
Kyle Steinfeld, Erica Brett
A cloud-based computational geometry modelling environment
decodes-code-editor-v1.appspot.com/login-page.html

CW-02 **CBE Thermal Comfort Tool for ASHRAE-55** Jun 12
Tyler Hoyt, Stefano Schiavon, Alberto Piccioli, Dustin Moon and Kyle Steinfeld
A web-based graphical user interface was developed for thermal comfort prediction according to ASHRAE Standard-55. This included models for conventional building systems (predicted mean vote) and also for comfort using the adaptive comfort model, and with increased air speeds (for example, when using fans for cooling).
comfort.cbe.berkeley.edu

CW-01 **Studiomaven** May 11 - Jul 16
Kyle Steinfeld
An online platform that targets students of environmental design and facilitates the peer-to-peer exchange of representational techniques, software tutorials, and other skill-training material relevant to studio practice. The Studiomaven project couples instructional improvement with research in user interface and digital design.
studiomaven.org

CW-06 **Decod.es Geometry Library** ongoing
Kyle Steinfeld, Joy Ko
A platform-independent computational geometry library targeting architectural designers, and built upon the strategies of host-independence, domain-specificity, and context-appropriate abstraction.
decod.es

CW-05 **Decod.es for Grasshopper** May 12 - Mar 13
Kyle Steinfeld
A visual-programming interface for the Decod.es geometry library (see above).

CW-03 **Dhour** Nov 12 - Jan 13
Kyle Steinfeld
A bioclimatic information design prototyping toolkit developed for the Grasshopper visual programming environment, which enables the situational development of information graphics.
www.food4rhino.com/project/dhour

grants and funded research

It is the norm in architectural design research to undertake many small-scale investigations that support larger research aims, and to fund such efforts through a multiplicity of funding structures. The project support presented below should be seen in the context of the other research outcomes produced, which may include the development of digital tools and/or the authoring of published work (related publications are noted). Unless otherwise indicated, I have served as principal investigator for all grants and funded research listed.

FR-18 **Data + Design Research Workshop** May 15
Graham Fleming, UC Berkeley Vice Chancellor for Research
Funding provided for a workshop to kick-start the development of a central repository of free and open-source software (FOSS) tools housed at UC Berkeley that enables the use of big data tools for urban data collection, coordination, and integration.

FR-17 **Studio One Technical Partnership** Aug 14 - May 15
Autodesk Design Research Group
Design Variations and Optimization
Support for research assistance related to Studio One, in the development of methods for the generation and exploration of massive design spaces.

FR-16 **Studio One Technical Partnership** Aug 14 - May 15
Autodesk Revit Project Group
Declarative Design Tools
Support for research assistance related to Studio One, in the development of design tools for the application of a "declarative design method" to the domain of architectural design.

FR-15 **Studio One Technical Partnership** Aug 14 - May 15
Autodesk Pier 9
Digital Fabrication Pipelines
Support for research assistance related to Studio One, in the development of automated "pipelines" for the rationalization and fabrication of architectural form. These include algorithms for the automated generation of flat panels for 2d-cutting, automated surface subdivision for 3d-milling, and automated geometric relaxation for finding similarly-sized elements.

FR-14 **Faculty Research Grant** Mar 14 - Sep 14
UCB Committee on Research
DHour
Support to further the development of an opensource software plugin called "Dhour" that enables the visualization of climate and building performance data.

FR-13 **IIS Mini-Conference Grant** Jan 15 - Apr 15
UCB Institute of International Studies
Public, Private, Protected Symposium
Support for a symposium on the current state of geometric and algorithmic literacy in architectural design education, and seeks to understand the evolving dynamic between increasingly powerful tools of design and the empowerment of designers.

FR-11 **IDEA Studio Fellowship** May 13
Autodesk
Computational Literacy for Architectural Designers
Support is to further the development of a library of computational geometry lessons and code samples intended to demystify the core concepts of design computation for an audience of architectural designers. This library, titled "Decod.es" and currently implemented as a cross-platform Python module, closely mirrors a pedagogical framework outlined in a book in development.

FR-10 **Faculty Research Grant** Jan 13 - Jun 13
UCB Committee on Research
Decod.es
Support for the development of a computational geometry library targeted to architectural designers. By facilitating an enhanced computational literacy, the proposed software holds the potential to become a key catalyst in the ongoing transformation of the practice of architecture into a more deeply collaborative and innovative discipline.

FR-09 **Hellman Fellowship** Sep 12 - Sep 13
The Hellman Foundation
Visualization Tools for Climate-Calibrated Design
Support for the development of a weather-data analysis and visualization tool-set for the next generation of climatically-responsive architecture. In contrast with heuristic tools directed toward known solutions, this tool offers architects an exploratory framework for discovering new design approaches by enabling nuanced and customizable queries of weather data, and aims to facilitate design processes better calibrated to climatic flows.

FR-07 **Research Enabling Grant** Sep 11 - Dec 11
UCB Committee on Research
Dhour: A bioclimatic information design prototyping toolkit
Support for research that seeks to develop a set of graphic interfaces, procedural standards, and software libraries that empower architectural designers to produce evaluative and rhetorical graphics.

FR-05 **Instructional Improvement Grant** Jun 11 - May 11
UCB Office of Educational Development
Studiomaven
Support for the development of a web-based platform for the peer-to-peer exchange of representational techniques.

FR-01 **Faculty Development Grant** May 08 - Aug 08
Pratt Institute
Force Feed
role: Co-PI
Support for a case study in design generation that tested the use of near real-time structural analysis, proposed in collaboration with Lonn Combs.

FR-02 **Graduate Fellowship** Sep 09 - May 10
Rensselaer Polytechnic Institute

professional activities

workshops and symposia

An important locus for the production and dissemination of knowledge surrounding the application of design software is the workshop. It is an honor to be invited to lead such workshops, just as it is a mark of distinction to organize symposia at parallel institutions and organizations. Workshops such as the ones listed below act both as professional service, a means of sharing design methods and fostering the critical application of design software, and as an instrument to further research through the field testing of new technologies of design.

WS-15 Workshop Organizer, **Fresh Eyes Workshop** Sep 19
Design Modeling Symposium, Berlin University of the Arts
Proposed and executed a 2-day workshop in Berlin that workshop brings recent developments in machine learning (ML) to bear on generative architectural design.

WS-14 Cluster Organizer, **Smart Geometry 2018** May 18
The University of Toronto
Proposed and executed a 4-day workshop cluster in Toronto through a peer-review process. The workshop brings recent developments in machine learning (ML) to bear on generative architectural design in order to improve the utility of artificial intelligence as a creative partner for design. Here, methods are developed for the incorporation of user-generated image-based ML recognition models into the evaluation step of a traditional generative design workflow.

WS-13 Workshop Organizer, **Design Modeling Symposium** Sep 15
The Royal Danish Academy of Fine Arts
In collaboration with Jessie Braden, Luis Jaggy, Joy Ko, and Lynnette Widder, organized a workshop on the visualization of large-scale data flows and small-scale human behavior.

WS-12 Chair, **The Data Made Me Do It Symposium** Mar 15
UC Berkeley
Chaired a two-day symposium on the dynamics of new technologies of design and the changing notions of design authorship, with focus on two divergent scales: data-mining as a new way of understanding the urban environment, and declarative design as an approach that disrupts traditional notions of the relationship between software tools and the physical realization of architecture.

WS-11 Co-Chair, **Data + Design** Mar 15
UC Berkeley
Organized a research workshop on making big-data analytics actionable for architectural design. The challenges of integrating big data analytics into the domain of architectural design and of making big data sets actionable within design practice remain critically underdeveloped. This one-day workshop sought to take steps to address this need by developing the models and interfaces required to enable designers to access cutting-edge geospatial mapping tools, crowdsourcing techniques, spatio-temporal analytics and data visualization methods, thereby significantly increasing their research capabilities.

WS-10 Cluster Organizer, **Smart Geometry 2014** Jul 14

The Chinese University of Hong Kong

Successfully proposed and executed a 6-day workshop cluster in Hong Kong through a peer-review process. This workshop speculates about about the use of a novel analytical tool for structuring the various spatial constituents and datasets related to high-density urban environments. This cluster argues that the complexity of Hong Kong's dense, interconnected commercial spaces cannot be properly analyzed and represented through conventional methods. In order to develop new ways to visualize and understand this spatial complexity, we developed a novel analytical tool for structuring the various spatial constituents and datasets. In collaboration with Carlos Sandoval, John Faichney, Scott Ewart, and Matthew Shaxted.

WS-09 Chair, **Public, Private, Protected Symposium** Apr 14

UC Berkeley

Chaired The Public, Private, Protected symposium, which takes stock of the current state of geometric and algorithmic literacy in architectural design education, and seeks to understand the evolving dynamic between increasingly powerful tools of design and the empowerment of designers. The discussion pivots around a manuscript for a foundational text on computational geometry and algorithmic architectural design, PB-02, authored by Joy Ko and Kyle Steinfeld.

WS-08 Cluster Organizer, **Smart Geometry 2011** Jul 11

The Royal Danish Academy of Fine Arts

Successfully proposed and executed a 6-day workshop cluster in Copenhagen through a peer-review process. Workshop examines the means by which environmental flows are identified and described. In contrast with generic approaches to quantification, this cluster hypothesizes that data-driven design must be supported by designed data, and promotes the production of designer-authored environmental datastreams: highly contingent, intrinsically idiosyncratic, free for public use, and encouraging of interpretation. In collaboration with Kat Park and Nicholas Novelli.

WS-07 Workshop Organizer, **Rhinoscript Workshop** Apr 08

The Ohio State University

Organized and led a 4-day workshop on generative design techniques utilizing Rhinoscript, a built-in scripting language for Rhinoceros.

WS-06 Workshop Organizer, **Game, Set, Match** Mar 07

TU Delft

Tutored a 1-day workshop on generative design techniques at TU Delft.

WS-05 Workshop Organizer, **Digital Futures Workshop** Feb 07

Pratt Institute

Organized and led a 1-day workshop on generative design techniques utilizing Processing, a Java development environment.

WS-04 Workshop Organizer, **De-mystifying Multi-Agent Design** Nov 06

TU Delft

Organized and instructed a 3-day workshop on design strategies utilizing "multi-agent" computational models, in collaboration with Saeed Arida and Kaustuv De Biswas.

WS-03 Workshop Organizer, **Design Fabrication Workshop** Jun 06

TU Delft

Organized workshop on digital design-to-fabrication techniques, instructed by Larry Sass.

WS-02 Tutor, **Smart Geometry**

Led a series of annual week-long workshops focusing on parametric and generative design techniques for the Smart Geometry Conference and presented selected projects, prior to the shift in the format of this event to the peer-reviewed cluster model which was adopted in 2010.

San Francisco	Mar 09
New York	Jan 07
Cambridge, UK	Jan 06

WS-01 Tutor, **Generative Components Workshop**

Organized and tutored a series of workshops on Generative Components and presented selected projects at subsequent digital design symposium.

NLSO conference	Oct 06
Pratt Institute	Sep 06
Prague Academy of Fine Arts	Jun 06
Stevens Institute	Mar 06
Massachusetts Institute of Technology	Apr 05
Columbia University	May 05
Columbia University	Oct 05

invited lectures, presentations, and posters

As is the case in other subject areas in architectural design, it is an honor to be invited to present research and creative work at parallel institutions and to an audience of professionals in practice. Given my research focus, the presentations and lectures listed below take on a particular significance as they represent a critical interface between my research and its domain of application. In this way, they form an important indicator of the impact of my research on the cultural and social structures of design practice. Where a presentation is given in the context of the publication of a conference paper, the related paper is indicated.

"Fresh Eyes", 2019 CAAD Futures Conference, Daejeon Korea Jun 19
Presented a framework for the application of machine learning to generative architectural design, and discussed work completed at the 2018 Smart Geometry Workshop. Hosted by Korea Advanced Institute of Science and Technology (KAIST).

"Fresh Eyes", Carnegie Mellon University School of Architecture Apr 18
Presented a talk on the potentials and limits of machine learning in architectural design.

"Dreams May Come", ACADIA Conference Oct 18
Cambridge, MA
Presented a concise theory of machine learning as it applies to creative architectural design, and offered a guide to future research at the intersection of ML and design tools

"Fresh Eyes", Kuwait University College of Architecture Apr 17
Presented a talk on the potentials and limits of machine learning in architectural design.

"Machine Learning and Evaluation", Session Chair, ACADIA Conference Oct 16
Presented a talk on "Procedural Design", and moderated a subsequent discussion in Session 9 of the ACADIA conference.

"Spatial Behaviors of Individuals in Cities", Urban Internet of Things Conference May 16
At this conference hosted by the University of Tokyo, we were awarded 'Best Poster' for the presentation of a range of case-studies of mapping and data tracking across urban scales.

"An Architecture of the Crowd", Tool() symposium, RISD Mar 15
Presented work that explores the use of crowdsourced techniques in creative design.

"Data Agency Session Presentation", Session Chair, ACADIA Conference Oct 14
Presented an essay on "Data Agency", and moderated a subsequent discussion in Session 6 of the ACADIA conference.

"Imperative, Functional, Object-Oriented", ACADIA Conference Oct 14
Cambridge, Ontario, Canada
Presented case-study results of the use of Dhour, a bioclimatic information design prototyping toolkit.

"The Data Made Me Do It", Skidmore, Owings and Merrill Jul 14
Presented to the San Francisco office of SOM a discussion of crowdsourced techniques in architectural design and urban analysis.

"The Data Made Me Do It", Gensler Jul 14
Presented to members of the San Francisco office of Gensler a discussion of crowdsourced techniques in architectural design and urban analysis.

"The Data Made Me Do It", Stamen Design May 14
Presented to Stamen Design a discussion of crowdsourced techniques in architectural design and urban analysis.

"Dhour", International Building Performance Simulation Association Sep 13
Presented to the New York Chapter of IBPSA a discussion of Dhour, a bioclimatic information design prototyping toolkit.

"Dhour", ACADIA Conference Oct 13
Cambridge, Ontario, Canada
Presented case-study results of the use of Dhour, a bioclimatic information design prototyping toolkit.

"Dhour", SOM Performative Design Group Aug 13
Presented Dhour, a bioclimatic information design prototyping toolkit.

"Decodes for Grasshopper", CAADRIA Conference May 13
Singapore
Presented progress toward a visual-programming interface for the Decod.es geometry library.

"Dhour", Autodesk Building Performance Analysis Group May 13
San Francisco
Presented a bioclimatic information design prototyping toolkit to industry group.

"Studiomaven", Autodesk Education Group Jan 12
Presented an online platform that targets students of environmental design and facilitates the peer-to-peer exchange of representational techniques, software tutorials, and other skill-training material relevant to studio practice.

"Situated Bioclimatic Information Design", California College of the Arts Nov 10
Presented selected design projects.

"Graphic Evaluative Frameworks", ACADIA Conference Oct 10
New York, New York
Presented paper, Graphic Evaluative Frameworks.

"Reflective Toolcraft", Rhode Island School of Design Apr 10
Presented selected computational design projects.

"Reflective Toolcraft", Bentley Enterprises Conference Mar 09
Presented selected design projects at this algorithmic design research symposium organized by Columbia GSAPP and the Architectural Association Design Research Laboratory.

University of Pennsylvania Mar 06
Presented selected computational design projects completed while at MIT.

Bentley Enterprises Conference Jun 06
Presented selected computational design projects at Bentley's annual innovation summit in Prague, Czech Republic.

Bentley Research Seminar May 05
Presented selected computational design projects completed while with Kohn Pederson Fox Associates.

eCAADe conference, Lisbon Sep 05
Presented selected computational design projects completed while with Kohn Pederson Fox Associates.

professional service

While other organizations remain relevant, my professional service centers upon the leadership role I have taken in The Association for Computer Aided Design in Architecture. ACADIA is regarded as the foremost organization in the world promoting research in digital design, and its stated aims hem closely to my own: "to facilitate communication and critical thinking regarding the use of computers in architecture... with a particular focus on the software, hardware and pedagogy involved in design education".

PS-05 **Session Chair,** ACADIA 2016 Conference Oct 16
Organized and moderated a session titled "Procedural Design: Machine Learning and Evaluation" at the 2016 ACADIA conference in Ann Arbor.
http://2014.acadia.org/schedule.html

PS-04 **Editorial Board Member,** Frontiers in Digital Humanities May 15
Served as a Review Editor on the Editorial Board of Digital Architecture, a speciality of Frontiers in Built Environment and Digital Humanities.
http://journal.frontiersin.org/journal/digital-humanities

PS-03 **Session Chair,** ACADIA 2014 Conference Oct 14
Organized and moderated a session titled "Data Agency" at the 2014 ACADIA conference in Los Angeles.
http://2014.acadia.org/schedule.html

PS-02 **Member, Board of Directors,** ACADIA Jan 15 - Jan 17
Served on the Board of Directors for the Association for Computer Aided Design in Architecture (ACADIA) as an 'alternate' member.

PS-01 **Technical Co-Chair,** ACADIA 2012 Conference Oct 11 - Oct 12
Co-chaired the 32nd Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA). Along with Jason Kelly Johnson and Mark Cabrinha, determined and implemented the conceptual, technical, operational and social vision for the conference. Oversaw the peer-review process and ensured the quality of the conference proceedings.
http://2012.acadia.org/

professional affiliations

Remaining closely attuned to the details of practical application of design software is essential to my work. The primary mechanism by which I maintain a connection to practice is the professional organizations with which I am affiliated. Included below are purely professional organizations, as well as those that aim to facilitate productive interfaces between academics and professional practice.

Member, **Smart Geometry** — May 06 - May 18
Smart Geometry promotes the emergence of an algorithmic design paradigm in architectural practice, and fosters a community built on annual workshops and an international conference. As a "core" member from 2010-2012, I participated in organizational governance and service.

Academic Partner, **Autodesk Pier 9 Creative Projects Partner** — Aug 14 - May 15
The Pier 9 Creative Projects Partnership program gives organizations a chance to work with technicians at Autodesk's Pier 9 in the development of creative or artistic work.
http://www.autodesk.com/artist-in-residence/projects

Academic Partner, **Autodesk BPA Research Partnership Program** — Apr 13 - Jun 15
The Building Performance Analysis Partnership Program supports a relatively low touch relationship between Autodesk and research teams working specifically on building energy performance.
http://sustainabilityworkshop.autodesk.com/bpa-research-partnerships#st-hash.3IWMbbzs.dpuf

Member, **ACSA** — Mar 13 - Present
The Association of Collegiate Schools of Architecture, founded in 1912 to advance the quality of architectural education through support of member schools, their faculty, and students.

Member, **ACADIA** — May 08 - Present
ACADIA facilitates communication and critical thinking regarding the use of computers in architecture, planning and building science. A particular focus is education and the software, hardware and pedagogy involved in education.

Member, **CAADRIA** — Sep 12 - Sep 14
The Association for Computer-Aided Architectural Design Research in Asia (CAADRIA) promotes teaching and research in CAAD in Asia, and has members on six continents. To promote research and teaching in CAAD that enhances creativity rather than production.

Member, **eCAADe** — Apr 13 - Apr 14
eCAADe (Education and research in Computer Aided Architectural Design in Europe) is a non-profit making association of institutions and individuals with a common interest in promoting good practice and sharing information in relation to the use of computers in research and education in architecture and related professions.

Member, **Digital Fabrication Alliance** — Aug 11 - Sep 13
The Digital Fabrication Alliance is a professional organization that brings together architects, engineers, fabricators, and builders interested in promoting the use of digital tools in the construction industry.

peer review

Listed here is a selection of book manuscripts, journal submissions, and conference papers for which I have served as a peer-reviewer.

ACADIA Conference Proceedings (ACADIA 2019, Austin TX)	Jun 19
ACADIA Conference Proceedings (ACADIA 2017, Cambridge MA)	Jun 17
ACADIA Conference Proceedings (ACADIA 2016, Ann Arbor MI)	Jun 16
Bloomsbury Publishing (manuscript review)	Mar 16
ACADIA Conference Proceedings (ACADIA 2015, Cincinnati OH)	Jun 15
Association for CAAD Research in Asia (CAADRIA 2015)	Dec 14
Routledge (blind manuscript review)	Sep 14
Journal of Architectural Education (JAE Vol 69, No. 01)	Jun 14
Texas Architects Annual Convention (TxA 2014, Austin TX)	Jun 14
ACADIA Conference Proceedings (ACADIA 2014, Los Angeles CA)	Jun 14
Simulation for Architecture and Urban Design (SimAUD 2014, Tampa FL)	Jan 14
Texas Architects Annual Convention (TxA 2013, Austin TX)	Jul 13
Smart Geometry Conference (SG 2013, London)	Mar 13
Future Traditions Conference (eCAADe Regional Workshop 2013, Porto)	Feb 1

invited design juries

In architectural design, it is a distinction to serve on an invited jury of student design work at peer institutions. Those listed below represent a selection of institutions to which I have been invited to serve as an external reviewer.

Kuwait University
PennDesign, University of Pennsylvania
Rhode Island School of Design
Carnegie Mellon University School of Architecture
School of Architecture + Planning, Massachusetts Institute of Technology
Ohio State University
Taubman College of Architecture and Urban Planning, University of Michigan
Graduate School of Architecture, Planning and Preservation, Columbia University
California College of the Arts

ucb courses instructed

I teach two types of courses in the Department of Architecture at UC Berkeley: core courses in design and architectural representation, and topical research studios and seminars in Design Computation. In the former category, I have organized much of the first semester of the MArch program through teaching courses comprising eight out of the twelve required credits in this semester (ARCH 200a & ARCH 200c). In this capacity, I applied principles concerning the relationship between design and digital representation uncovered in my research to the core design curriculum. In the latter category, I have introduced advanced topics in the application of computation to architectural design through studio and seminar work (ARCH 205, ARCH 229, ARCH 202, ARCH 100d, and ARCH 101). The nature of architectural design studios is such that subject matter is not repeated from year-to-year. As such, unless otherwise indicated below, each studio course listed here may be regarded as a new course that I have developed for each year it was instructed. This largely holds true with seminar courses as well, although in some cases seminar content may repeat, and subject matter iteratively refined each year. Distinctions are noted below, and courses are ordered by frequency of instruction. For courses that centered on visual material, an online teaching portfolio may be found at teaching.ksteinfe.com

ARCH 200c Representational Practice in Architectural Design

Core seminar on architectural representation, required of MArch option three students.
I was the first to develop and instruct this core graduate seminar in 2011, and have been iteratively refining it each year since. The course seeks to cultivate an understanding of the foundational discourse and diversity of approaches to architectural representation; to develop a fluency in the canonical methods found in architectural practice; and to encourage the development of a personal relationship to forms of modeling and formats of drawing.

Fall 19, Fall 18, Fall 17, Fall 16, Fall 14, Fall 13, Fall 12, Fall 11

ARCH 200a Architectural Design Studio

Core design studio, required of MArch option three students.
Introductory course in architectural design and theories for graduate students. Studio assignments are newly developed each year, and emphasize the major format, spatial, material, tectonic, social, technological, and environmental determinants of building form. Work from this studio has been featured on the ArchDaily website: https://www.archdaily.com/885258/a-glimpse-into-the-weird-world-of-architecture-students-first-assignments

Fall 18, Fall 17, Fall 16, Fall 13, Fall 12, Fall 11

ARCH 229 Graduate Seminar in Digital Design Theories and Methods

Topical research seminar.
I was the first to develop and instruct this graduate seminar in 2013, and have been iteratively refining it in years since. Both a survey of contemporary theories and a treatment of foundational technical topics, this course aims to demystify design computation and prepare students to engage with computational tools and techniques as practicing architects. An account of contemporary practices is paired with a rigorous treatment of computational geometry and applied computer programming.

Spring 18, Spring 17, Spring 14, Spring 13

ARCH 229 Building Performance and Visualization

Topical research seminar.
Advanced simulation tools allow us to predict building performance with increasing accuracy while challenging conventional modes of architectural design practice. How can we visualize simulated data in a way that gives intuitive, nuanced feedback? How can we take advantage of computing power and scripting techniques to establish quick feedback loops between parametric analysis and iterative design? This seminar, which I initially developed in collaboration with Brendon Levitt, explores the potential of building performance simulation and data visualization to shape architectural design.

Spring 17, Spring 13

ARCH 205 Studio One

Topical research studio, required of MArch option one (Studio One) students.
Set in the larger context of the Studio One program, this studio shapes inquires into the contemporary status of global spaces of work in the context of the shift from industrial to cognitive-cultural societies. The application of data-driven design methods guides this investigation, including the use of generative, analytical, and optimization routines set in the service of the design of office space at a range of architectural scales. The setting of Silicon Valley and the broader Bay Area provides studio participants with a unique opportunity to forge radically new design paradigms.

Spring 15, Fall 14

ARCH 100d Advanced Undergraduate Option Studio

Topical research studio, open to Undergraduate students in their final semester.
This studio, titled Significant Others, grapples with problems related to the integration of physical and digital form-finding techniques into creative architectural design. Embracing the schema of the formal design experiment, the course seeks to resolve the authoritative voice that is so often bestowed upon the results of form-finding processes with the traditional authorial voice of the designer. This is accomplished through a series of formal material experiments that undermine the uncompromising and imperative voice, and replace it with one of a range of potential alternative voices: double, foil, doppleganger, collaborator, trickster, confederate, and enemy.

Spring 18, Spring 17

ARCH 204 Thesis Seminar and Studio

In the final year of the MArch degree program, students are expected to develop a thesis project in a seminar setting in the Fall semester, and to execute this project in a studio setting in the Spring semester. Guiding students through an engagement with the most urgent issues concerning digital design in the field today is an important part of my role as an advisor of theses and dissertations.

AY 18-19

ARCH 202 Advanced Graduate Option Studio

Topical research studio, open to MArch students.
Advanced architectural design studio seeking to explore emerging technologies and methods that supplant traditional models of design, and suggest a new deferred authorship found in complex systems and a distributed agency offered by co-authored works. The theme of work and play guide the investigations, both on methodological and programmatic levels - these include the analysis and design of existing structures of gaming, the hybridization of these games with precedent works of architecture that present idealized models of work, and the production of a co-authored parametric design system that utilizes crowd-sourcing technologies.

Spring 14

ARCH 229 Turkers' Delight

Topical research seminar.
The initial crisis of the digital in architectural design unfolded as traditional media became digital media. Now, as creative designers we might anticipate a new crisis on the horizon, as digital media becomes social media. The seminar turns on a question regarding design research methods in the digital age. We will ask what networked media might mean for design research and creative production. We look to understand how can it help us identify and design for publics, users, and subjects that have newly emerged or have been recently conjured by our networked society.

Spring 15

ARCH 101 Case Studies in Architecture

Topical research studio, open to undergraduate students of architecture.
Selected topics undergraduate studio: Imaging Architecture. If visual means of representation inevitably leave behind an imprint of their character on the architectural work, then what are the latent biases of our traditional means of representation? What new and more intentional biases may we invoke by more consciously deploying our means of representation?

Spring 11

ARCH 100a Fundamentals of Architectural Design

Core design studio, required of undergraduate students of architecture.
Introductory course in the design of buildings. Problems emphasize conceptual strategies of form and space, site relationships and social, technological and environmental determinants.

Fall 10

ARCH 124a Intermediate 2d/3d Computer Modeling

Basic course on 3d modeling and drawing.
Provides students with practical hands-on experience in using professional architectural modeling software (e.g. 3DStudioMax, Maya, Rhino, etc.). The course covers the process of creating, manipulating, and communicating through digital architectural models.

Summer 18, Summer 19

mentorship

Guiding students through an engagement with the most urgent issues in the field today concerning digital design is an important part of my role as an academic. It is worth noting that a number of students I have worked with as a graduate thesis advisor were first introduced to the methods required for scholarly research as co-authors on many of the publications and research projects listed above. I consider this introduction to contributions to the discipline through design research an important part of student mentorship.

master of architecture thesis advising

Yaming Fu, Drifting City	Spring 19
Can Ge, The Reality of Virtuality	Spring 19
Chenoe Hart, Auto-Montage	Spring 19
Chengcheng Huang, Co-creators	Spring 19
Ruochen Liao, Forgotten Lands	Spring 19
Xiaoyu Ma, Re-duce, Re-use, Re-architecture	Spring 19
Jordan Miodownik, Community Building / Community Building	Spring 19
Yiqing Tong, A Personal Pattern Language of Dynamics	Spring 19
Matthew Turlock, Necessary Tension	Spring 19
Yiqi (Vicky) Wang, On Order: Differentiated Continuity of Objects	Spring 19
Zhaoxuan (Josh) Wang, Seamless	Spring 19
Yang Xie, Post-, Posture	Spring 19
Hongyu Zhang, Composition not Position	Spring 18
Pablo Hernandez, Scanning Praxis	Spring 18
Anlan Chen, Our/Place	Spring 17
Chenjian Zheng, Skinny Shenzhen	Spring 17
Lauren Yatar, If City Then [x,y,z]	Spring 17
Dongil Kim, De:flatable Bowad	Spring 16
SeoJoo Lee, Structural Negotiator in Political Territory	Fall 15
Jun Li, Not Standard	Spring 15
Kelsey Brennan, Not Exactly	Spring 15
Rudy Letsche, The City and the City	Spring 15
Luis Jaggy, The Feed	Spring 14
Levon Fox, Post-Post Office	Spring 14
Ned Reifenstein, Subject to Change	Spring 13
Peter Suen, A Balanced Architecture	Spring 13
Kristen Henderson, Evocative Relief	Spring 13
Nicholas Buccelli, Data Diving: Novel Adjacencies in Cloud Space	Spring 12
Michael Bergin, Housing Agency System (HAS)	Spring 12
Kyung Jin Han, Untitled	Spring 11
Chun Sing Kwan, Customizability in Residential Housing	Spring 11

master of urban design thesis advising

Ned Reifenstein, Subject to Change	Spring 13

doctor of philosophy advising

I have served as a committee member for a number of PhD students outside of the Department of Architecture, often advising students of Computer Science in work that suggests applications in design and architecture.

Pei-Yu Chi — Summer 16
Designing Video-Based Interactive Instructions
Doctor of Philosophy in Computer Science
advisory role: Outside Member

Eric Lee Turner — Spring 15
3D Modeling of Interior Building Environments and Objects from Noisy Sensor Suites
Doctor of Philosophy in Electrical Engineering and Computer Sciences
advisory role: Outside Member

Nicholas Corso — Spring 15
Sensor Fusion and On-line Calibration of an Ambulatory Backpack System for Indoor Mobile Mapping
Doctor of Philosophy in Electrical Engineering and Computer Sciences
advisory role: Outside Member

graduate mentorship

Mentorship in professional design education moves beyond formal advising related to thesis. Listed here is a selection of graduate students for whom I have served as a research mentor in a less formal manner.

Matt Turlock, Dongil Kim, Peter Samuelson, Max Edwards

undergraduate mentorship

Undergraduate design education often does not require the production of a formal thesis, but offers other opportunities for student mentorship. Listed here is a selection of undergraduate students for whom I have served as mentor.

Khoa Vu, Jaclyn Berry, Jung In Seo, Anne Wei, Hannes Frykholm, Henry Stephens, Zaw Myat, Bernadette Ma, Alice Kao, Sean Phillips, Amy Hu

university service and administration

Detailed below are the administrative and service positions I have held at the departmental, college, and university levels.

university-level service

Associate Director, **Master of Design (MDes) Program** — Jul 19 - Jun 20

Joint graduate degree program that brings together the College of Environmental Design and College of Engineering. Duties of the Associate Director include: To represent the MDes program to external audiences, including building relationships with peer/feeder institutions, and developing industry contacts to facilitate student internships and career placement; to represent the CED and coordinate with CED leadership and staff to ensure that MDes students are supported in accessing resources and facilities at Wurster Hall; to work with the Academic Director in administrative matters, such as hiring instructors and staff and preparation for academic program reviews, especially as it relates to the curriculum overseen by the College of Environmental Design; to participate in or lead the MDes admissions committee, curriculum committee, and/or graduate advising committee.

college-level service

Department of Architecture Representative, **CED Executive Committee** — Aug 18 - May 19

Voting member of the Executive Committee representing the interests of the faculty of the Department of Architecture.

Secretary of the Faculty, **CED Executive Committee** — Aug 15 - May 17

Served the Executive Committee as Secretary representing the faculty of the College of Environmental Design.

Member, **Wurster Hall Studio Redesign Pilot** — Sep 13 - May 14

Consulted in the production of designs for the renovation of Wurster Hall studios.

Member, **Strategic Planning Round Two Task Force** — Mar 13 - May 13

Participated in the "Power Performance Analytics" group, tasked with developing a strategic plan for the College of Environmental Design.

Member, **Strategic Planning Round One Task Force** — Jan 13 - Mar 13

Participated in the "Future of Design" group, tasked with developing a strategic plan for the College of Environmental Design.

Member, **Cal Design Lab Organizational Retreat** — Oct 11

Provided feedback on lab activities to date, and developed ideas for future collaborations, pedagogical initiatives, and partnerships.

Member, **CED Website Redesign Committee** — Sep 11 - Jun 13

Consulted with web designer Oilpan in the redesign of the College of Environmental Design website.

department-level service

Member, **Undergraduate Committee** — Jul 16 - Jun 17

Faculty Adviser, **GSI Affairs** — Sep 14 - Sep 15

Director, **2014-2015 Studio One Degree Program** — Oct 13 - May 15

Member, **Undergraduate Committee** — Jul 14 - Jun 15

Member, **Branner Fellowship Committee** — May 14 - Sep 14

Reviewed applications for the Branner Travelling Fellowship, and recommended winning entries.

Chair, **2014 Studio One Graduate Admissions Committee** — Jan 14 - Mar 14

Member, **Undergraduate Committee** Jul 13 - Jun 14

Chair, **Committee on Representation and Visual Communications** Jan 12 - Jan 14
Initiated the formation of a departmental service position whereby the management of all graduate student instructors teaching in the area of representation and visual communication is consolidated.

Member, **2013 MArch Graduate Admissions Committee** Jan 13 - Mar 13

Member, **2012 MArch Graduate Admissions Committee** Jan 12 - Mar 12

Member, **Branner Fellowship Committee** Jun 11
Reviewed applications for the Branner Travelling Fellowship, and recommended winning entries.

Member, **2011 MArch Graduate Admissions Committee** Jan 11 - Mar 11

Member, **Undergraduate Curriculum Committee** Jul 10 - Jun 11
Played a key role in assessing the existing BA in Architecture curriculum, and developing a proposal for revisions thereof.