

## CURRICULUM VITAE

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Dimitris Papanikolaou, DDes, is the director of the Urban Synergetics Lab at the University of North Carolina Charlotte (UNCC) and an Assistant Professor jointly between the School of Architecture and the Department of Software Information Systems. His research integrates areas of big data, complex systems modeling, and interactive computing to design and analyze intelligent urban, building, and mobility systems. His interests include ubiquitous computing, computer-supported cooperative work, multi-agent systems, system dynamics, information visualization, urban operations research, human-building interaction, and design research. He holds a Doctor of Design from Harvard GSD, an MSc from MIT Media Lab, and a SMArchS from MIT Architecture.

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### EDUCATION

- 2016 **HARVARD UNIVERSITY, CAMBRIDGE, MA**  
Doctor of Design (DDes), Graduate School of Design (GSD)  
Dissertation: "The Potential of On-demand Urban Mobility: Lessons from System Analysis and Data Visualization"  
Committee: Prof Jose Gomez-Ibanez (advisor), Prof Jeffrey Schnapp, Prof Spiro Pollalis.
- 2011 **MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT), CAMBRIDGE, MA**  
Master of Science in Media Arts and Sciences, Media Lab, GPA: 4.94/5.00  
Thesis: "The Market Economy of Trips"  
Committee: Prof William Mitchell (advisor, 2009-2010), Kent Larson (advisor, 2010-2011), Prof John Sterman, Prof Neil Gershenfeld, Prof David Parkes (Harvard SEAS).
- 2008 **MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT), CAMBRIDGE, MA**  
Master of Science in Design and Computation, School of Architecture & Planning (SAP), GPA: 4.70/5.00  
Thesis: "Attribute Process Methodology: Feasibility Assessment of Digital Fabrication Production Systems for Planar Part Assemblies Using Network Analysis and System Dynamics"  
Committee: Prof William Mitchell (advisor), Prof Larry Sass, and Prof Dennis Shelden.
- 2004 **NATIONAL TECHNICAL UNIVERSITY OF ATHENS (NTUA), ATHENS, GREECE**  
5-year Diploma in Architectural Engineering (MEng / Dipl.-Ing. equivalent), GPA: 9.0/10.0  
Thesis: "Junction and Disjunction: Redevelopment of Piraeus Port"  
Committee: Prof Tassos Biris (advisor), and Prof Panagiotis Touliatos.
- 2000-2001 **DELFT UNIVERSITY OF TECHNOLOGY (TUD), DELFT, NETHERLANDS**  
Erasmus Exchange Scholar in the Department of Architecture
- 1995-1996 **NATIONAL TECHNICAL UNIVERSITY OF ATHENS (NTUA), ATHENS, GREECE**  
Registered student in the School of Naval Architecture and Marine Engineering

### APPOINTMENTS

- UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE**
- 2017 - current Assistant Professor (Tenure Track), joint appointment between:
- School of Architecture, College of Arts + Architecture
  - Department of Software Information Systems, College of Computing and Informatics

- 2018 - current Director, Urban Synergetics Lab
- 2018 - current Faculty Affiliate, Infrastructure and Environmental Systems (INES) PhD Program
- 2017 - current Faculty Affiliate, Complex Systems Institute

#### **HARVARD UNIVERSITY**

- 2016 - 2017 Postdoctoral Associate (working with Prof Jose Gomez-Ibanez), Graduate School of Design
- 2013 - 2014 Energy and Environment Fellow, Harvard Center for the Environment
- Fall 2012 Teaching Fellow (for prof Martin Bechthold and prof Panagiotis Michalatos)
- Spring 2012 Research Assistant, Responsive Environments and Artifacts Lab

#### **NEW YORK UNIVERSITY (NYU)**

- 2014 - 2015 Assistant Professor (Adjunct), Interactive Telecommunications Program (ITP), Tisch School of the Arts

#### **MICROSOFT RESEARCH (MSR), REDMOND, WA**

- Summer 2014 Research Intern, Computational User Experiences & VIBE groups (for A.J. Bernheim Brush and Asta Roseway)

#### **MIT**

- 2009-2011 Research Assistant, MIT Media Lab, Smart Cities & Changing Places groups
- 2008-2009 Research Fellow, MIT Media Lab, Smart Cities group
- 2008-2011 Teaching Assistant (for Prof William Mitchell and Kent Larson), MIT Media Lab
- Summer 2007 Research Assistant, Digital Fabrication Group, MIT Architecture
- Spring 2007 Teaching Assistant (for Prof Dennis Shelden), MIT Architecture

#### **AWARDS & FELLOWSHIPS**

- 2017 **Faculty Research Grant UNCC SOA – Innovative Design Practices (\$7,500)**  
**Faculty Research Grant UNCC (\$8,000)**  
**One-Time Fund UNCC SOA (\$42,000)**
- 2016 **Award ACADIA Scholarship (\$370)**  
**Award Meyer Transportation Research Harvard Kennedy School of Government (\$20,000)**
- 2015-2013 **Scholarship A.G. Leventis Foundation (\$24,000)**
- 2014 **Award Harvard Deans' Design Challenge: Urban Life 2030 (\$15,000)**  
University-wide innovation prize that awards “projects that envision order of magnitude improvements to the livability of our cities by 2030.” Organized by the School of Engineering and Applied Sciences (SEAS), the Graduate School of Design (GSD), and the Harvard Business School (HBS).
- 2013 **Scholarship Harvard Graduate Consortium on Energy and Environment (\$13,500)**
- 2011 **Award MIT Transportation Showcase** in Economics, Finance, Policy and Land Use  
**Award Harvard GSD 2-year half tuition (\$52,000)**
- 2009 **Winner of Buckminster Fuller Challenge (\$100,000)**  
International innovation prize that awards “outstanding visionary projects with the capacity to solve humanity’s most pressing problems” (with Ryan Chin, Andres Sevtsuk, William Lark, Michael Lin, Charles Guan, Raul-David Poblano)

- Semi Finalist, MIT \$100K Entrepreneurship Contest:** Electric Vehicle MoD Systems  
(With Ryan Chin, Arthur Mak, Mike Beaser, Isabella Chao)
- Award MIT Media Lab** 2-year full tuition (**\$84,100**)
- 2008 **Finalist in National Design Competition:** Billes Products, New Orleans, LA
- 2007 **Scholarship Gerondelis** for graduate studies at MIT (**\$5,000**)
- 2006 **Award MIT Architecture** 2-year half tuition (**\$42,050**)
- Fellowship Fulbright** for graduate studies at MIT (**\$18,000**)
- 2004 **Distinction NTUA** Graduation
- 2002 **First Prize in National Design Competition (€50,000):** Cultural Center of Pylaea, Greece  
Design Intern (with Tassos Biris, Katerina Michalopoulou, Antonis Touloumis, and Sofia Tsiraki).
- First Prize in National Design Competition (€50,000):** Town Hall of Aghia Paraskevi, Athens, Greece  
Design Intern (with Tassos Biris, Konstantios Daskalakis, Maria Mandalaki, Marina Stasinopoulou, and Alexandros Vazakas).
- 2000 **Scholarship Erasmus (€1,500)**

## SELECTED RESEARCH PROJECTS

### I. COMPLEX SYSTEMS, URBAN MOBILITY, DATA VISUALIZATION

- 2016 - current **Analogies between discrete and continuous patterns in MoD systems** / Harvard GSD  
I show that, despite apparent randomness, every trip pattern in MoD systems can consolidate into a four-node network without changing its sizing and rebalancing requirements. The reduction allows comparative dynamic analysis of MoD systems by simple deterministic compartment models.
- 2016 - 2014 **Data-driven system dynamics model for sizing and rebalancing MoD systems** / Harvard GSD  
A system dynamics model that allows researchers and policy makers to interactively explore how sizing and rebalancing decisions affect ridership, cost, and carbon emissions in existing MoD systems.
- Dynamic Land Use Transport Interaction Model for MoD systems** / Harvard GSD  
A dynamic Land Use Transport Interaction (LUTI) model consisting of a land use model, a trip generation model, and a stock-flow model that jointly explain how urban form determines performance limits of MoD systems.
- Data Visualization Tools for MoD Systems** / Harvard GSD  
Developed a library of interactive data visualization tools in D3, JavaScript, and Processing, for collecting, analyzing, and visualizing trip patterns in MoD systems.
- 2015 - 2014 **Cloudcommuting Marketplace** / Harvard GSD  
A web-based electronic marketplace that allows online riders and station traders to transact in real time. The platform is built in dynamic web technologies and can be used in large-scale participatory experiments.
- 2015 **SD.JS** / Harvard GSD  
A system dynamics library in JavaScript and D3 that allows researchers to build, simulate, and control, interactive system dynamics models directly in a web-browser.
- 2011 - 2010 **The Market Economy of Trips (MSc Thesis)** / MIT Media Lab  
Designed and analyzed a pricing mechanism for socially fair prices in MoD systems based on a two-sided market. Prices depend on inventory needs of origins and destinations, causing some trips to cost more while others to pay back (with Prof William Mitchell and Kent Larson, Prof John Sterman, and Prof David Parkes). *MIT Transportation Showcase Award*.
- Vehicle Dynamics** / MIT Media Lab  
Developed system dynamics and agent based models for studying how performance in dynamically priced MoD systems depends on demand, pricing policy, income distribution, and price of substitutes.
- 2011 - 2008 **Mobility on Demand Systems (MoD)** / MIT Media Lab

Co-developed a vehicle sharing system of lightweight electric cars and scooters that allow users to make point-to-point trips on demand and fold during parking to minimize footprint (with Prof William Mitchell and Kent Larson; collaborators: General Motors, Denokinn, and Schneider Electric). *Best Automotive Invention of 2007, TIME magazine. Winner of \$100K Buckminster Fuller Award.*

- 2008 **New Orleans Action Plan Assessment** / MIT Architecture  
Co-developed a system dynamics model of the urban infrastructure of New Orleans for assessing the impact of governmental policies on post-disaster urban metabolism (with Prof John Fernandez and Dr. Earthea Nance)

## II. HUMAN COMPUTER INTERACTION, INTERACTIVE MEDIA

- Summer 2014 **BodyPods** / Microsoft Research  
Developed a series of multisensory seats that allow remote users to perceive each other's presence by exchanging their bodyprints through the internet (with A.J. Bernheim Brush and Asta Roseway).
- 2013–2011 **Strategic Games for studying MoD systems** / Harvard GSD  
Developed an interactive strategic board game for empirically studying perception of payoffs, decision-making, and price equilibrium in dynamically priced MoD systems.
- Spring 2012 **Responsive Learning Environments** / Responsive Environments and Artifacts Lab (REAL), Harvard GSD  
Compiled case studies on how HCI technologies enhance learning experiences and developed guidelines for designing augmented learning environments (with Prof Allen Sayegh, Prof Martin Bechthold, and Edith Ackermann. Client: AYB Educational Foundation).
- 2011 – 2010 **PriceScapes** / MIT Media Lab  
Designed a visual interface for dynamically priced MoD systems that uses contour (or heat) maps to relate trip prices to slope gradients (with Prof William Mitchell)

## III. COMPUTATIONAL DESIGN, FABRICATION, BUILDING TECHNOLOGY

- 2008- 2007 **Constructability Assessment of Planar-part Assemblies** (SMArchS Thesis) / MIT Architecture  
Developed a method to assess constructability of 3D models of planar-parts by analyzing the assembly graph and simulating assembling rate using system dynamics (with Prof. William J. Mitchell)
- Summer 2007 **Computing Concrete Blocks** / Digital Fabrication Group / MIT Architecture  
Developed a method to design and digitally fabricate custom molds for concrete blocks using stacked laminated sheets (with Prof Larry Sass).
- Spring 2007 **FabHouse** / Digital Fabrication Group / MIT Architecture  
Developed a method to construct irregular structural envelopes from regular joints that retains grid continuity across adjacent walls while maintaining perpendicularity of connected parts (with Prof Larry Sass and Prof Dennis Shelden).
- Spring 2007 **Parametric Graphic Statics** / MIT Architecture  
Developed a graphical method for finding equilibrium forms of funicular domes under discrete uneven loads based on graphic statics (with Prof John Ochsendorf).

## PUBLICATIONS

### PEER REVIEWED

- 2018 Parnami, A. Prajval Bavi, Dimitris Papanikolaou, Srinivas Akella, Minwoo Lee, and Siddharth Krishnan. Deep Learning Based Urban Analytics Platform: Applications to Traffic Flow Modeling and Prediction. In Proceedings of 3rd ACM SIGKDD International Workshop on Urban Computing (Mining Urban Data) (London, UK, 20 August 2018).
- Papanikolaou, D. Data-driven State Space Reconstruction of Mobility on Demand Systems for Sizing-Rebalancing Analysis. In *Proceedings of the 2018 Symposium on Simulation for Architecture and Urban Design - SimAUD*, (TU Delft, Netherlands, 4-7 June 2018)

- 2016 Papanikolaou, D. BodyPrint: Exploring Architecture as a Medium for Human Interaction. In *Proceedings of the 2016 Association for Computer Aided Design in Architecture (ACADIA): Posthuman Frontiers: Data, Designers and Cognitive Machines* (University of Michigan Taubman College, Ann Arbor, Michigan, 27 - 29 October 2016). (Award)
- Papanikolaou, D. Visualizing Dynamics of User and Worker Interactions in On-demand Urban Mobility Networks: The Case of Boston's Bike Share System. Accepted in *Proceedings of the 18th International Conference on Human-Computer Interaction* (Toronto, Canada, 17 - 22 July 2016) – Revoked by author.
- 2015 Papanikolaou, D. A.J. Bernheim Brush, and Asta Roseway. BodyPods: Designing Posture Sensing Chairs for Capturing and Sharing Implicit Interactions. In *Proceedings of ACM SIGCHI TEI'15: 9th International Conference on Tangible, Embedded and Embodied Interaction* (Stanford University, Stanford, CA, 15-19 January 2015)
- 2013 Papanikolaou, D. Cloudcommuting: Games, Interaction, and Learning. In *Proceedings of ACM SIGCHI IDC'13: 12th International Conference on Interaction Design and Children* (New York, NY, 24-27 June 2013)
- Papanikolaou, D. and Larson K. Constructing Intelligence in Point-to-Point Mobility Systems. In *Proceedings of the IEEE 9th International Conference of Intelligent Environments* (Athens, Greece, 18-19 July 2013)
- 2011 Papanikolaou, D. and Sterman J. The Market Economy of Trips. In *Proceedings of the 29th International Conference of the System Dynamics Society - ISD*, (Boston, MA, USA, 24-28 July 2011)
- Papanikolaou, D. The Market Economy of Trips. In *Proceedings of the 8th International Conference on Complex Systems - ICCS* (Boston, MA, USA, 26 June-1 July 2011).
- Papanikolaou, D. The Market Economy of Trips. In *Proceedings of the 1st Interdisciplinary Workshop on Information and Decision in Social Networks - WIDS* (Cambridge, MA, 31 May-1 June 2011)
- Papanikolaou, D. Pricescapes: Connecting Distance, Time, and Payoffs. In *Proceedings of the 4th Writing Cities Conference: Distance and Cities* (LSE, London, UK, 19-21 May 2011)
- Papanikolaou, D. Vehicle Dynamics: A New System Dynamics Framework for Modeling Behavior of Vehicle Sharing Systems. In *Proceedings of the 1st Symposium on Simulation for Architecture and Urban Design - SimAUD*, (Boston, MA, USA, 4-7 April 2011)
- 2010 Papanikolaou, D. Understanding Behavior of Intelligent Self-Organizing Vehicle Sharing Systems. In *Proceedings of the 14th Iberoamerican Congress in Digital Graphics - SIGraDi* (Bogota, Colombia, 17-19 Nov. 2010)
- Papanikolaou, D. Sustainable Self-Organizing Vehicle Sharing Systems Using Incentive Mechanisms. In *Proceedings of the 2nd International Conference on Computational Sustainability* (Cambridge, MA: MIT CSAIL, 28-30 June, 2010)
- 2009 Papanikolaou, D. Digital Fabrication Production System Theory: Evaluating Assemblability of File-to-Factory Projects Using Network Analysis. In *Proceedings of the 1st International File to Factory Symposium* (Chania, Greece, 2-5 September 2009)
- 2008 Papanikolaou, D. Digital Fabrication Production System Theory: towards an integrated environment for design and production of assemblies. In *Proceedings of the 12th Iberoamerican Congress in Digital Graphics - SIGraDi* (Havana, Cuba, 1-5 Dec. 2008)
- Papanikolaou, D. Evaluating Assemblies of Planar Parts Using Liaison Graph and System Dynamics. In *Proceedings of the 26th Annual Conference of Education and Research in Computer Aided Architectural Design in Europe - eCAADe* (Antwerp, Belgium, 17-20 Sept. 2008)
- Papanikolaou, D. Augmenting Constructability Evaluation of CAD/CAM Projects Using Systems Theory. In *Proceedings of the 3rd International Conference: Design, Computing, and Cognition* (Atlanta, GA: Georgia Institute of Technology, 23-25 June 2008).
- Papanikolaou, D. From Representation of States to Description of Processes. In *Proceedings of the 1st International Conference: Critical Digital* (Cambridge, MA: Harvard University, 18-19 April 2008)

**UNDER PEER REVIEW**

- 2019 Papanikolaou, D. Computing (with) Architecture. 107<sup>th</sup> ACSA Annual Meeting I Black Box: Articulating Architecture's Core in the Post-Digital Era (Carnegie Mellon University, Pittsburgh, PA, 29-30 March 2019)
- 2019 Papanikolaou, D., Atefeh Mahdavi Goloujeh. The Cost of Travel in Mobility on Demand Systems: Lessons from Data Analysis and Simulation of Active and Dispatch Trips in Chicago Taxi Systems. CAAD Futures 2019 (Korea Advanced Institute of Science and Technology – KAIST, Daehak-ro, Korea, 26-28 June 2019)
- 2019 Papanikolaou, D. Computing Architectures: Pedagogical Explorations at the Intersection of Design and Mechanical Computation. CAADRIA 2019 (Victoria University of Wellington, New Zealand, 15-18 April 2019)

#### ARTICLES & BOOK CHAPTERS

- 2018 Papanikolaou, D. Governing the Commons of Mobility. In *Bracket 5 [On Sharing]*, Eds. Bhatia, Neeraj and Maya Przybylski.
- 2015 Papanikolaou, D., "Choreographies of Information: Communication through Architectural Form in the Early Napoleonic Internet of Optical Telegraphy" in *New Geographies 07: Geographies of Information*, ed. Ali Fard and Taraneh Meshkani (Harvard Graduate School of Design Press, 2015).
- 2013 Papanikolaou, D., "Design Methods for Adaptive Mobility" in *Unconventional Computing: Design Methods for Adaptive Architecture*, ed. Simone Ferracina and Rachel Armstrong (Riverside Architectural Press, 2013).
- 2012 Papanikolaou, D., "Changing Forms, Changing Processes" in *Interdisciplinary Design: New Lessons from Architecture and Engineering*, ed. Hanif Kara et al. (ACTAR Press, 2012), 106-114
- Papanikolaou, D., "Intelligent Infrastructures" in *Infrastructure Sustainability and Design*, ed. Spiro Pollalis et al. (Routledge, 2012), 266-274
- 2010 Papanikolaou, D., "Digital Fabrication Production System: Customization on Demand" in *Computational Constructs*, ed. Shouheng Chan et al. (Architecture Press of China, 2010), 84-102
- Mitchell W.J., Borroni-Bird C. E., and Burns L. D., *Reinventing the Automobile: Personal Urban Mobility for the 21st Century* (MIT Press, 2010): Contributed with images, diagrams, and content
- 2006 Papanikolaou, D., "Junction and Disjunction" in *Architecture in Greece*, no. 40 (2006): 38-40

#### THESES

- 2016 Papanikolaou, D., "The Potential of On-demand Urban Mobility: Lessons from System Theory and Data Visualization" (Doctoral Dissertation, Harvard GSD, Cambridge, MA, 2016)
- 2011 Papanikolaou, D., "The Market Economy of Trips" (MSc. Thesis, MIT, Cambridge, MA, 2011)
- 2008 Papanikolaou, D., "Attribute Process Methodology: Feasibility Assessment of Digital Fabrication Production Systems for Planar Part Assemblies Using Network Analysis and System Dynamics" (MSc. Thesis, MIT, Cambridge, MA, 2008)
- 2003 Papanikolaou, D., "Object and Identity" (Diploma Thesis, NTUA, Athens, 2003)

#### OTHER

- 2017 Papanikolaou, D. Exploring Alternative Sizing-Rebalancing Scenarios in Mobility on Demand Systems. In *American Planning Association, Technology Division, Planning & Technology Today*, Spring 2018.
- Papanikolaou, D. The Shelter as a Medium for Life: Investigations on Form, Information, and Computation, Across Scales. In "A Shelter for Architecture" catalogue, Ed. Bouras C., et al. GIANY, New York. 2018.
- Papanikolaou, D. With Mind and Body. In *SLUS Online Magazine*, Nov 2017.
- 2013 Papanikolaou, D., Ed. "The Elements of Urban Intelligence; New Pedagogies in Global Architectural Theory", in *Proceedings of 102<sup>nd</sup> Annual Meeting of the Association of Collegiate Schools of Architecture (ACSA)*, April 2013
- Papanikolaou, D., Ed. "Preface - Proceedings of the 1st International Workshop of Constructing Urban Intelligence - CUI 2013", in *Ambient Intelligence and Smart Environments*, vol. 17, 139-140, 2013

## CONFERENCE PRESENTATIONS & INVITED TALKS

### CONFERENCE PRESENTATIONS

- 2018 **15th Architectural Humanities Research Association International Conference.** Department of the Built Environment, TU Eindhoven, Nov 15-17 2018  
**Environment and Planning B:** Urban Analytics and City Science Symposium on “Urban Systems Design: from ‘Science for Design’ to ‘Design in Science,’ University of Tokyo, Japan, Mar 19-21 2018
- 2016 **ACADIA Conference,** university of Michigan, Oct 28 2016 (invited project presentation)  
**HISTEM 2016,** Architectural Studio Tinkerings workshop, University of Athens Greece, Dec 16 2016  
**Responsive Cities,** Symposium Institute of Advanced Architecture of Catalonia (IAAC), Sep 16 2016 (accepted)  
**32nd System Dynamics PhD colloquium,** Worcester Polytechnic Institute, Apr 22 2016
- 2015 **31st System Dynamics PhD colloquium,** MIT Sloan School of Management, Dec 04 2015
- 2014 **TEDx HGSE,** Harvard Graduate School of Education: Imagine. Inspire. Ignite, Apr 12 2014  
**Harvard GSD:** Advanced Studies Program Doctoral PechaKucha, Feb 21 2014
- 2013 **27th System Dynamics PhD colloquium,** University of Albany, Nov 01 2013  
**Harvard Graduate Consortium on Energy,** Harvard Center for the Environment, Oct 11 2013  
**Global Sustainability Working Group,** MIT SAP, May 01 2013
- 2012 **Connect1ons Conference on Network Science,** MIT Media Lab, Dec 17 2012  
**Smarter Cities Symposium,** Harvard GSD, Dec 03 2012
- 2011 **MIT Transportation Showcase,** MIT Museum, Nov 17 2011  
**MIT Energy Night,** MIT Museum, Oct 21 2011  
**Innovations in Sustainable Mobility,** MIT Media Lab, Professional Education Short Programs, Jun 27-30 2011  
**Writing Cities Conference,** London School of Economics, 19-21 May 2011  
**SimAUD Conference,** Boston MA, 4-7 April 2011  
**MIT Energy Conference,** Mar 4 2011
- 2010 **NISSAN Research Salon:** MIT Faculty Club, Jul 7-8 2010  
**Computational Sustainability Conference,** MIT CSAIL, 28-30 June, 2010  
**Smart Customization Conference,** MIT Media Lab, Jun 20-21 2010  
**20th System Dynamics PhD Colloquium,** MIT Sloan School of Management, Apr 30 2010  
**MIT Media Lab Annual Research Conference,** MIT Media Lab, Apr 20 2010  
**Ubiquitous Eco-Cities Symposium,** Harvard GSD, Apr 12 2010  
**MIT Energy Conference,** Mar 4 2010
- 2009 **World Design Congress: 26<sup>th</sup> International Council of Societies of Industrial Design (ICSID)** Singapore, Nov 23-27 2009  
**5<sup>th</sup> Symposium on Design Science,** Rhode Island School of Design, Nov 14-15 2009  
**File to Factory Symposium,** Chania, Greece, 2-5 September 2009  
**MIT House N Research Consortium:** MIT Faculty Club, Jun 23 2009  
**1<sup>st</sup> Annual MIT Design and Computation Alumni Symposium,** MIT SAP, Feb 2009
- 2008 **SIGraDi** Conference, Havana, Cuba, 1-5 Dec. 2008

**Design, Computing, and Cognition (DCC) Conference**, Georgia Institute of Technology, Atlanta, GA, 23-25 June 2008

**Critical Digital Conference**, Harvard GSD, 18-19 April 2008

**PechaKucha Boston** Volume #4, Apr 10 2008

#### INVITED TALKS

- 2018 **SOA/COAA UNCC**, Architecture+Urbanism Lecture Series, Feb 26 2018 (invited by Zhongjie Lin)  
**Passport INC**, "Outside-In" Seminar, Feb 13 2018 (Invited by Christina Kyriazi)  
**Data Science Initiative UNCC**, Seminar, Feb 09 2018 (invited by Mirsad Hadzikadic)  
**Data Visualization Center, UNCC**, Seminar, Feb 01 2018 (invited by Zachary Wartell)
- 2017 **CCI UNCC**, Computation & Interdisciplinary Research, Dec 01, 2018 (invited by Alireza Karduni)  
**Complex Systems Institute UNCC**, Complex Conversations, Nov 17 2017 (invited by Mirsad Hadzikadic)  
**SOA/COAA UNCC**, Design Computation Seminar, Nov 09 2017 (invited by Eric Sauda)  
**SIS/CCI UNCC**, PHD Seminar, Oct 27 2017 (invited by Mary Lou Maher)  
**SIS/CCI UNCC**, HCI Seminar, Oct 06 2017 (invited by Mary Lou Maher)  
**SOA/COAA UNCC**, Computational Methods Seminar, Sep 22 2017 (invited by Rachel Dickey)  
**SOA/COAA UNCC**, Seminar, Sep 08 2017 (invited by Chris Jarrett)  
**UN STUDIO NL**, Amsterdam: Top Floor Dialogues No 52, Jun 08 2017 (invited by Ben Van Berkel)  
**Penn State University SEDTAPP**, Feb 07 2017. Special Talk (invited by Scarlett Miller)  
**University of North Carolina at Charlotte**, Feb 03 2017. Special talk (invited by Eric Sauda)  
**University of Michigan**: Institute for Data Science / MIDAS, Jan 13 2017 (invited by Alfred Hero)
- 2016 **Harvard University GSD**: Open Projects MDes, Nov 02 2016 (invited by Delia Wendel)  
**University of Michigan**: ACADIA conference, Oct 28 2016 (invited project presentation)  
**European Code Week**: 4<sup>th</sup> Public School of Voula, Greece, Oct 23 2016 (**Keynote**)  
**Massachusetts College of Art and Design**: Tuesday Talks, Oct 18 2016 (invited)  
**MIT Senseable City Lab** (invited by Carlo Ratti), Oct 04 2016  
**MIT Sloan School of Management**: System Dynamics Seminar, May 06 2016 (invited by John Sterman)  
**MIT SAP**: Design Computation PhD Forum, Apr 27 2016 (invited)  
**Greek Institute of Architects New York**: DIALOGUES, Apr 15 2016 (invited by GIANY)  
**Dartmouth College**: Studio Art Department, Apr 14 2016 (invited by Zenovia Toloudi)  
**Northeastern University**: College of Arts, Media, and Design, Feb 18 2016 (invited by Dietmar Offenhuber)  
**Harvard GSD**: Responsive Environments, Feb 09 2016 (invited by Allen Sayegh)
- 2015 **Dartmouth College**: Department of Computer Science, Nov 17 2015 (invited by Emily Whitening)  
**MIT SAP**: Computational Making class, Mar 10 2015 (invited by Terry Knight)  
**Carnegie Mellon University School of Design**, Feb 25 2015. Special talk.
- 2014 **New York University** Tisch School of the Arts: Interactive Telecommunications Program, Nov 20 2014  
**Citi Bike** Headquarters New York, Nov 09 2014  
**Microsoft Research FUSE Labs**, Jul 24 2014 (invited by Justin Cranshaw)  
**Microsoft Research**: HCI Intern Talks, Jul 23 2014 (Redmond, WA)  
**Microsoft Research**: Computational User Experiences Group, Jul 10 2014 (invited by Desney Tan)

- MIT Media Lab:** MAS.500 – Fundamentals, Apr 18 2014
- Harvard GSD:** Smart[er] Cities course, Apr 18 2014 (invited by Prof Nashid Nabian)
- Penn State University** Stuckeman School, Apr 16 2014. Special talk,
- Arizona State University** Herberger Institute for Design and the Arts, Apr 09 2014. Special talk.
- Office for Metropolitan Architecture (OMA)** New York, Mar 18 2014 (invited by Shohei Shigematsu)
- New Jersey Institute of Technology** College of Art and Design, Feb 11 2014. Special talk
- Wentworth Institute of Technology:** Transportation Design and the Sustainable City, Feb 10 2014
- 2013 **Harvard GSD:** Networked Urbanism Studio, Oct 16 2013 (invited by Belinda Tato and Jose Luis Vallejo)
- Institute for Research in Art and Design (IDK)** FHNW Basel, Jul 19 2013. Special talk
- University of California Berkeley:** Institute of Design, Mar 21 2013 (invited by Prof Dor Abrahamson)
- University of Patras:** Architecture of Complex Systems; from Assemblies to Smart Cities, Jan 15 2013 (invited by Prof Yannis Aesopos)
- National Technical University of Athens:** Interdisciplinarity in Design, Research & Education, Jan 10 2013 (invited by Prof Dimitris Papalexopoulos)
- National Technical University of Athens:** Smart Cities, Mobility, and Coordinated Behavior, Dec 11 2013 (invited by Prof Panagiotis Tournikiotis)
- 2012 **MIT Senseable City Lab,** Nov 06 2012
- Harvard Graduate School of Education:** Future Technologies in Education, Apr 04 2012
- 2011 **NOKIA Research Center** (Cambridge, MA), Nov 09 2011
- Wentworth Institute of Technology, School of Architecture:** How to do a thesis research, Oct 27 2011 (invited by Prof Zenovia Toloudi)
- MIT Sloan School of Management:** Design Club, Oct 18 2011
- MIT SAP:** Design Computation PhD forum, Oct 14 2011
- University of Coimbra:** Energy for Sustainability Initiative, Apr 29 2011
- Portuguese Chamber of Architects:** Ginko gallery (Algarve, Portugal), Apr 29 2011
- 2010 **Harvard GSD:** Research Demo for DDes program, at MIT Media Lab, Nov 02 2010 (invited by Eve Blau)
- State Farm:** Research Demo at MIT Media Lab, Oct 26 2010
- Fujitsu Laboratories:** Research Demo for Fujitsu chairman & Director for Mobile Phones Business Group, Oct 12 2010
- World Future Society:** Research Demo at MIT Media Lab, Jul 08 2010
- MIT Senseable City Lab,** Jun 29 2010
- BBVA:** Research Demo for BBVA Chairman and CEO at MIT Media Lab, Jun 10 2010
- Adolfo Ibanez University, Chile:** Research Demo for Dean of the Business and Innovation School and President at MIT Media Lab, Jun 10 2010
- General Motors:** Research Demo for Vice President of GM China and General Manager of GM Beijing Operation, Jun 08 2010
- Honda Research Institute:** Research Demo for Honda R&D, and Honda Research Institute, Jun 03 2010
- MIT Motorola Liaison:** Research Demo for Sheila Griffin, Apr 23 2010
- Architectural Association of London:** Research Demo for Design Research Laboratory, Apr 20 2010 (invited by Prof Theo Spyropoulos)
- Urban Land Institute:** Research Demo for ULI Forum: Smart Environments, Apr 16 2010
- US House of Representatives:** Research demo at MIT Media Lab, Apr 06 2010

- Siebel Fellows:** Research demo at MIT Media Lab, Apr 05 2010  
**Denokinn:** Research demo at MIT Media Lab, May 07 2010  
**DARPA Service Fellows:** Research demo at MIT Media Lab, Mar 17 2010  
**Media Lab Building's Donors:** Research Presentation, Mar 05 2010  
**Autolib, Paris,** Jan 21 2010 (invited by Autolib Head Manager)  
2009 **MIT DUSP,** Dec 11 2009 (Invited by Prof Chris Zegras)  
**Adrian Smith + Gordon Gill Architecture** (Chicago, IL), Jun 09 2009 (invited by Carlo Parente)  
**Buckminster Fuller Institute** (Chicago, IL), Jun 5-6 2009  
**The Dallas Assembly:** Research Presentation at MIT Media Lab, Apr 24 2009  
**Harvard GSD:** Urban Mobility Lecture Series, Apr 4 2009  
2008 **Technical University of Delft (TUD):** Research Presentation for The Why Factory at MIT Media Lab, Nov 20 2008  
**MIT Leaders for Manufacturing Program:** Research demo for LFP students, Nov 07 2008  
**Catholic University School of Architecture:** Research Demo for Prof Carlos Barrios & 12 students, Oct 20 2008

## INTERVIEWS / PRESS COVERAGE

- 2014 **MIT SAP News** (mention on Harvard Deans Challenge), Jul 2014  
**Harvard GSD News** (interview on Harvard Deans Challenge), May 20 2014  
2013 **Kathimerini** newspaper, Greece (interview on MoD systems), Jul 11 2013  
**Proto Thema** newspaper, Greece, Jan 09 2013  
2012 **Ant1 TV News**, Greece (interview on innovative teaching pedagogies), Jun 03 2012  
2011 **Super Quark** in **RAI TV**, Italy (interview on MoD systems), Jun 10 2011  
2010 **Ta Nea** newspaper, Greece, Nov 19 2010  
**MIT Entrepreneurship Review**, USA (interview on MoD operations), May 02 2010  
**Maximizing Progress TV**, USA, Feb 24 2010  
2009 **Pathfinder News TV**, Greece, Jul 27 2009  
**Boston University** Journalism Dept. interview for Channel 5, Mar 20 2009  
2006 **Cool Hunting** Video, USA, Nov 27 2006  
**DWELL** magazine, USA, Nov 26 2006

## CONFERENCES / LECTURES ORGANIZED

- 2018 **SimAUD 2019** / Georgia Tech  
Co-organizer / Scientific Chair  
The Symposium on Simulation for Architecture and Urban Design (SimAUD) offers a platform to unite researchers and practitioners in the fields of architecture, urban design and planning, building science, and data science. SimAUD is run collaboratively with ACM/SIGSIM and is sponsored by the Society for Modeling and Simulation International. Organizers: Siobhan Rockastle, Tarek Rakha, Carlos Cerezo Davila, Dimitris Papanikolaou, Tea Zakula.  
2017 **ACADIA 2017: Education Roundtable** / MIT  
Co-organizer and Co-Chair

The session tackles broad questions in the diverse cultures of architecture and design programs across disciplines, professions, and industry. Panelists: Ruairi Glynn (Bartlett); Heather Roberge (UCLA); Meejin Yoon (MIT); Jason Kelly Johnson (CCAC); Dan O' Sullivan (NYU ITP).

2014-2011

**FWD TALKS** / Harvard GSD

Founder, Organizer

FWD talks present breakthrough ideas at the intersection of design, technology, and policy, currently shaping our world. Sponsored by Harvard. Speakers included: Shohei Shigematsu (OMA); Robert Aish (Autodesk); Robert Wood (Harvard SEAS); Assaf Biderman (MIT Senseable City Lab); Ann-Pendleton Julian (KSA/OSU); David Mellis (Arduino).

2014

**102<sup>nd</sup> Annual Meeting of the Association of Collegiate Schools of Architecture (ACSA)** / Miami, FL Apr 2014

Chaired and conceived session: "The Elements of Urban Intelligence; New Pedagogies in Global Architectural Theory,"

The session explored new pedagogical directions in the emerging interdisciplinary field of media and digital technologies in architecture, urbanism, and landscape design.

**Harvard Asia Business Conference: Moving Up the Value Chain** / Harvard Business School (HBS) Apr 2014

Chaired and conceived session: "Design, Technology, and Innovation,"

The session explored the role of design, technology, and innovation in transforming tomorrow's economies through industry-specific value chains.

2013

**Mohsen Mostafavi in Conversation with Nicholas Negroponte** / Harvard GSD, Oct 2013

Co-organizer

Invited Nicholas Negroponte (MIT Media Lab founder) for a public conversation with Mohsen Mostafavi (Harvard GSD Dean) on the topic of "Designer's Pedagogy in the 21st Century."

**9<sup>th</sup> International Conference on Intelligent Environments** / Athens, Greece Jul 2013

Chaired and conceived session: "Constructing [Urban] Intelligence: This, Here, Now,"

The session explored new models, methods, and problems for constructing ambient intelligence through human interaction and media technology.

**1<sup>st</sup> Annual Doctor of Design Symposium: Convergence: Research as Practice** / Harvard GSD Apr 2013

Co-organizer

The symposium investigated the topic of design research in both academia and practice.

2012

**5<sup>th</sup> Writing Cities Conference** / Harvard, MIT, and London School of Economics, May 2012

Co-organizer

The conference provided a forum for graduate students to present peer reviewed papers on new ways of thinking cities.

**Symposium: Debating Design and Innovation in Times of Crisis** / Harvard GSD, May 2012

Co-organizer, Moderator

The symposium investigated the role of design, innovation, and entrepreneurship during times of socioeconomic crisis.

2012 – 2008

**PechaKucha Night Boston** / Boston & Cambridge, MA

Co-organizer, Co-moderator

Co-organized the worldwide-known public lecture series event in Boston, inviting speakers from media arts and sciences.

2011 – 2010

**Smart Cities lecture series** / MIT Media Lab

Organizer, Moderator

Organized lectures on smart cities. Speakers included: Prof Constantinos Daskalakis (MIT CSAIL) on *Nash Equilibria and Complexity*, and Mauro Martino (Northeastern University) on *Mapping Mobility Patterns*.

## TEACHING

### COURSES & WORKSHOPS TAUGHT

Fall 2018

**Connective Environments: Human-Building Interaction (ARCH 6307/4050, ITIS 6010, ITCS 5010)** / UNCC

Instructor, Course Developer

Provides foundational skills in designing, prototyping, and programming interactive physical computing systems. Emphasis is on critical thinking and tradeoffs between technical complexity, end goals, design decisions, functionality, and quality of craft, when humans are part of the loop. Topics: Mechanical assemblies; human-in-the-loop systems; interactive embedded systems; tangible, embodied, and embedded interfaces; programmable materials; network communications; serial input-output; data visualization.

Spring 2018

**Intelligent Architectures (ARCH 7104 Graduate Diploma Studio) / UNCC**

Instructor, Course Developer

The graduate thesis studio explores the design, modeling, and analysis, of intelligent architectural or urban ecosystems as well as their cyclic transitions in time, asking the question: how do we design intelligent architectures across technologies and scales? Topic areas include: shared mobility systems; sharing systems capable of serving more demand with less capacity; transformable structures exploiting energy to adapting to programmatic needs.

Fall 2017

**Synergetic Cities: Form, Social Behavior, and Coordination (ARCH 6307/ITIS 6010/ITCS 5010) / UNCC**

Instructor, Course Developer

Cross-listed graduate seminar between Architecture, Software Information Systems, and Computer Science that critically reviews the evolution and design principles of systems of urban and territorial intelligence, from the ancient networks of optical telegraphy to today's internet of things. Topics: Theory and technologies of computation, information, and human factors in relation to the built environment; systems theory; cybernetics; social cooperation; game theory; mechanism design; applications in mobility, sustainability, and energy.

Fall 2017

**Studio Lab: Museums of the 21<sup>st</sup> Century (ARCH 7103) / UNCC**

Co-Instructor, Course Co-Developer

Research-based design studio cross-listed between Architecture, Software Information Systems, and Computer Science. Working with both augmented reality (AR) technologies and physical computing, students develop novel bidirectional mixed-reality interfaces for design exploration, learning, and spatial perception.

Fall 2014

**Rethinking Point-to-Point Urban Mobility (ITPG-GT 2621 001) / ITP NYU**

Instructor, Course Developer

Designed and taught a graduate-level research course that introduces the theory, underlying technologies, and operational complexities of intelligent mobility on demand (MoD) systems, using NYC Citi Bike sharing program as a case. First half of course focused on analyzing performance of truck rebalancing while second half on exploring crowd-sourced rebalancing through interactive experiments.

Winter 2014

**Toy Product Design: Mechanical Assemblies (GSD00045) / Harvard GSD**

Instructor, Course Developer

Designed and taught a graduate-level hands-on course that explores design, fabrication, and assembly of mechanically actuated toy cars that store kinetic energy and use it for self-propulsion. Working in teams, students learn fundamentals of mechanical assemblies, physics, parametric CAD modeling and Design for Assembly Techniques.

Summer 2013

**DIY: From Design to Production / Hellenic American Educational Foundation, Athens**

Instructor, Course Developer

Designed and taught a workshop in which mid- and high-school students learned how to design, develop, digitally fabricate, and assemble, toy products.

Fall 2012

**Lifecycle Design (GSD6574) / Harvard GSD**

Teaching Fellow

Co-taught graduate-level lifecycle analysis and product design with recyclable materials. Taught modeling and simulation of material flows for industrial systems and construction industry supply chains using System Dynamics (With Prof Martin Bechthold).

Fall 2012

**Computational Design (GSD6338) / Harvard GSD**

Teaching Fellow

Co-taught graduate-level students computational design and advanced geometric modeling using C# programming language (With Prof Panayiotis Michalatos)

Summer 2012

**Smart Cities / Hellenic American Educational Foundation, Athens**

Instructor, Course Developer

Designed and taught a course on smart transportation systems in which high-school students learned economics and systems thinking by comparatively designing, building, playing, and analyzing interactive board games and multi-agent simulation models to understand how users make rational decisions.

Spring 2012 **CloudCommuting** / NuVu Studio, Cambridge

Instructor, Course Developer

Designed and taught a course on smart cities, in which high-school students used physical computing, sensors, interaction design, and game theory to collectively build an augmented board game that reacts to players' decisions with incentives.

Spring 2012 **Design for Do-It-Yourself Manufacturing (MAS.S63)** / MIT Media Lab

Co-Instructor

Taught design, production, and distribution strategies in a cross-disciplinary studio that explored product development of custom-made electronic devices for small quantity production (with David Mellis).

2011 – 2008 **Mobility on Demand Systems (MAS.552)** / MIT Media Lab

Teaching Assistant, Group Leader

Co-taught for six semesters a graduate-level studio in which students explored topics on logistics, performance, and economics of MOD systems using analytical, simulation, and experimental methods (with Prof William Mitchell and Kent Larson)

Spring 2011 **Mobility on Demand** / Vienna University of Technology

Co-instructor

Taught a 5-day workshop where students developed a board game simulation to study economics and user decisions of MOD systems (in collaboration with the Austrian Institute of Technology and MIT)

Spring 2011 **Ecological Urbanism workshop** / Vasco da Gama School of Architecture, Coimbra

Instructor

Designed and taught a 5-day studio workshop in which students designed a vehicle-sharing deployment and used role-playing games to creatively explore topics of sustainability, economics, and self-governance.

December 2010 **Systems Thinking executive education workshop** / MIT Sloan School of Management

Tutor

Facilitated execution of the MIT Beer Distribution Game, a role-playing simulation in which participating executives learned fundamental concepts of systems thinking for supply chain management (with Prof John Sterman)

Fall 2007 **Architecture Design Core Studio I (4.151)** / MIT Architecture

Teaching Assistant

Taught design-thinking to graduate-level students helping them shape their ideas into final projects (with Prof Andrew Scott and Prof Nader Tehrani).

Spring 2007 **Professional Applications of Digital Fabrication and Construction (4.553)** / MIT Architecture

Teaching Assistant

Taught graduate-level students advanced parametric design and administrated relations with industrial course collaborators (with Prof Dennis Shelden).

#### **STUDENTS / INTERNS / RESEARCH ASSISTANTS ADVISED / SUPERVISED**

2018-2019

Atefeh Mahdavi Goloujeh, PhD student, Software and Information Systems UNCC (advisor)

Jin Goog Kim, PhD candidate, Software and Information Systems UNCC (committee)

Amir Hosseinzadeh Zarrabi, PhD student, Infrastructure and Environmental Systems Program UNCC (committee)

Armin Amirazar, PhD student, Infrastructure and Environmental Systems Program UNCC (committee)

Yijing An, Dual degree M.S..Arch & M.S. Software Information Systems UNCC (advisor)

Manoj Deshpande, Dual degree M.S. Arch. & M.S. Software Information Systems UNCC (Research Assistant)

Bhargavi Narayan Bhat, M.S. Information Technology UNCC (Research Assistant)

Saqib Sarwar, Dual degree M.S. Arch & M.S. Software Information Systems UNCC (Research Assistant)

2017-2018

Paul McKnight, Dual degree M.Arch 2 & MS Software Information Systems UNCC (thesis advisor)

Ali Fatemi, Dual degree M.Arch 2 & MS Software Information Systems UNCC (research assistant)

Nicholas Roberts, BS Computer Science UNCC (research assistant)

- 2016-2017 Norman Dandridge, M.Arch. candidate, Massachusetts College of Art and Design (MassArt).  
Co-advisor in M.Arch. Thesis Fall 2016
- 2014 - 2013 Vina Rahimian, MSc student, Pennsylvania State University, College of Arts and Architecture.  
Reader on MSc thesis on smart homes and energy consumption
- 2011 – 2010 Jet SiZhi Zhou, Research Assistant, Undergraduate Research Opportunities Program (UROP), MIT.  
Supervisor on programming an online participatory game and a visualization interface for dynamic pricing.
- 2009 Kaustuv De Biswas, PhD student, MIT Design and Computation group.  
Supervisor on developing a 3D multi-agent simulation model that was showcased during the 26<sup>th</sup> ICSID World Design Congress in Singapore, Fall 2009
- 2008 Koit Saaravet, Visiting Scholar, Hubert H. Humphrey Fellowship Program, Fulbright.  
Supervisor on compiling data from vehicle sharing systems for calibrating a system dynamics model
- Jorge Andres Barrios, Intern, MIT Summer Research program (MSRP).  
Supervisor on developing multi-agent simulation model for Mobility on Demand systems, Fall 2008.
- Marcus Parton, Research Assistant, Undergraduate Research Opportunities Program (UROP), MIT.  
Supervisor on a case study on fleet management methods for vehicle sharing systems, Fall 2008.

**INVITED DESIGN STUDIO CRITIC**

- 2016 **Massachusetts College of Art and Design**  
M.Arch Thesis Studio, Mid Reviews Nov 21 2016
- 2016 - 2015 **Dartmouth College, Studio Art Department**  
SART 66/68: Art, Architecture, and Public Space, Nov 15 2016  
SART 65: Intro to Architecture, Digital Technology, and Culture, Jun 02 2015  
SART 66/68: Architecture and Living Matter(s), Fall 2015
- 2016 - 2012 **Harvard GSD**  
HGSD 6349 Mapping II: Geosimulation, Dec 15, 2016  
HGSD 02314: Responsive Environments: Bergamo eMotion, Final Reviews, Apr 26, 2016  
HGSD 6328: Interdisciplinary Design and Practice, Final Reviews, Apr 25, 2016  
HGSD 02314: Responsive Environments: Bergamo eMotion, Mid Reviews, Mar 22, 2016  
HGSD 01304: Socio-Environmental Responsive Design, Fall 2014  
HGSD 01502: Networked Urbanism: Urban Waste - Urban Design, Fall 2013  
HGSD 01502: Networked Urbanism, Fall 2012  
HGSD 06468: Digital interfaces for collaborative and participatory design, Fall 2012
- 2016 **Northeastern University**  
Architecture Infrastructure and the City, Oct 31(mid reviews) and Dec 13 (final reviews), 2016
- 2015 - 2013 **MIT SAP**  
4.552 Computational Making: Light and Motion, Spring 2015  
4.112: Architecture Design Fundamentals I – Origins of Life, Nov 05 2013
- 2013 - 2012 **Wentworth Institute of Technology**  
ARCH 590: Special Topics Graduate Studio, Oct 31 2013  
ARCH 956 Architecture Thesis Studio, Spring 2013  
ARCH 956 Architecture Thesis Studio, Spring 2012
- 2012 **Benaki Museum of Contemporary Art**  
Digital Design Workshop, Summer 2012
- 2009 **Boston Architecture College**  
SA701: Foundation Design A-1 Masters, Spring 2010  
SA701: Foundation Design A-1 Masters, Fall 2009
- 2008 **Parsons, the New School for Design**  
Architecture Thesis Studio, Fall 2008

## SERVICE

### SCIENTIFIC COMMITTEE / PEER REVIEWER

2017

#### ACADIA 2017

International Conference / MIT, Cambridge, MA, 2 - 4 November 2017. Reviewed papers in topics related to smart cities and interactive environments

#### Technology Architecture & Design (TAD): Issues 02 & 03

Journal / Reviewed papers in topics related to urban simulation

2016

#### Technology Architecture & Design (TAD): Issue 01

Journal / Reviewed papers in topics related to smart cities

#### IEREK: Parallelism in Architecture, Environment and Computing Technologies (PACT)

International Conference / London, UK, 12 - 14 September 2016. Reviewed papers in topics related to smart cities and interactive environments

#### ACADIA 2016

International Conference / University of Michigan Taubman College, Ann Arbor, Michigan, 27 - 29 October 2016. Reviewed papers in topics related to smart cities and interactive environments

#### ACSA

International Conference / Pontificia Universidad Católica de Chile, Escuela de Arquitectura, Santiago, Chile, Jun 29-Jul 1, 2016. Reviewed papers in session: "Ecology"

2013

#### 9<sup>th</sup> International Conference on Intelligent Environments

International Conference / Athens, 16-17 July 2013. Reviewed papers in session "Intelligent Environments for Creative Learning"

2012

#### Open Hardware Summit 2012

International Conference / New York, US. Reviewed papers in topics related to smart technologies.

### JUROR IN COMPETITIONS

2013

#### Building Global Innovators (€1,000,000 prize)

Venture Competition 4<sup>th</sup> Edition: Smart Cities track. MIT Portugal Program: Judge during the finalist session, Nov 04 2013, and Mentor during the semi-finalist boot camp session, Jul 23 2013

2013

#### Innovation Prize for Africa (\$150,000 prize)

University of Cape Town Business School, South Africa, 2013

2012

#### Innovate Salone 2012

Youth innovation competition, Sierra Leone, Africa

### CONTRIBUTOR IN WORKSHOPS

2011

**OpenIDEO** Amnesty International Challenge, at MIT, Nov 03 2011

**The MEME** The Connected Car Design Studio, Cambridge, MA, Jun 06-09 2011

2010

**SARCHA** Future of Cities (online workshop), Mar 01 2010

2009

**Bank of America** and **INTUIT**, Future of Payments, at MIT Media Lab, Sep 17 2009

2008

**General Motors** and **SYM Motors**, Future of Mobility, at MIT Media Lab, Oct 31 2008

### MILITARY / SOCIAL SERVICE

2006 - 2005

Hellenic Navy, Greece

Radar Operator, Human Resources Assistant Manager

Administered radar/radio communications with ships and ground military units and managed national security documents. Developed a scheduling algorithm to assist work shifts and supervised supply orders.

## PROFESSIONAL EXPERIENCE

### INDEPENDENT PROFESSIONAL PRACTICE AS A LICENSED ARCHITECT

- 2012 **Bioclimatic European School in Heraklion**, Crete, Greece (international competition)  
Designed a 6,000m<sup>2</sup> bioclimatic educational complex consisting of kindergarten, primary, and secondary education. Commissioned by the Greek School Buildings Organization [SBO]. *Featured in: 5<sup>th</sup> Architecture Triennale, in Crete* (with Aristodimos Komninos)
- 2009 **60-unit housing complex in Valverde**, Spain (international competition)  
Designed a 6,000m<sup>2</sup> sustainable housing complex of 60 units (with Zenovia Toloudi)
- 2006 **Prehistoric Museum in Jeongok**, South Korea (international competition)  
Conceptualized, designed, and 3D modeled a museum for prehistoric findings consisting of multiple excavated rooms in the natural landscape, sheltered by a tessellated canopy (with Tassos Biris, Sofia Tsiraki, and Angelos Angelou).
- 2004 **Private Hotel in Dodoni**, Greece (commission)  
Developed a design proposal for a 540m<sup>2</sup> hotel in Dodoni, Greece, securing funding for the client of more than 65% of the project budget by meeting requirements of the Ministry of Tourism and negotiating on design details with the building contractor.

### ARIS – MITROPOULOS ARCHITECTS & PROJECT CONSULTANTS, ATHENS, GREECE

- 2004-2006 Project Architect  
Worked on large-scale redevelopment projects such as the **Former Olympic Complex of Phaleron Bay** and the **Metropolitan Park of Hellenikon** in Greece, and on commercial building projects such as the Village Mall, a 14-cinema multiplex in Athens.

### SPARCH (SAKELARIDOU-PAPANIKOLAOU ARCHITECTS), ATHENS, GREECE

- 2006 Project Architect  
Coordinated the landscape design of IASO General, a 55,000-m<sup>2</sup> private clinic in Larisa, Greece and developed construction details in collaboration with consulting engineers.

### BOUKI BABALOU & ANTONIS NOUKAKIS ARCHITECTS, ATHENS, GREECE

- 2002 Intern  
Worked on 3D CAD models and visualizations for a national competition for the Cultural Center of Halicarnassus, Crete, Greece, Summer 2012.

### ATELIER MANOLIS PANTELIDAKIS, ATHENS, GREECE

- 2000 Intern  
Revised concepts and detailed stage design commissions for concert halls, music theaters, and shows with acclaimed Greek artists, Spring 2000.

## SELECTED DESIGN PROJECTS

- 2011 **FabCar** / Product Design  
A digitally fabricated and manually assembled 4WD toy car consisting of 3 connected differential gears and 234 mechanical parts. *Showcased in Guatemala by MIT Prof Meejin Yoon as example of cross-disciplinary design work*
- 2010 **Portal** / User Interface & Human Computer Interaction  
Prototyped an application for smart phones that uses the inertial sensors and display screen to allow a video-receiving user to guide the camera frame of a video-transmitting user
- 2004 **Junction and Disjunction** / Arch. Engineering Diploma thesis project, NTUA

An urban redevelopment project at the port of Piraeus, Greece, that programmatically links two docks at the Piraeus port with a foldable floating pedestrian bridge, two container-based public markets, and a multipurpose building

- 2001 **High-rise Building Workshop** / Building Technology, TU Delft  
Lead the design of a 60-floor high-rise office building in a team of 5 students as part of an international workshop. Awarded distinction for best architectural design.
- 2000 **Pedestrian Bridge Workshop** / Building Technology and Structural Design, NTUA  
Lead the design, engineering, fabrication, and assembly of a 4-meter long tensegrity pedestrian bridge made of timber (in a team of 5 students).

## EXHIBITIONS PARTICIPATED

- 2017 Architecture 1:1. Group exhibition, Benaki Museum, Athens, Greece  
UNCC SOA Faculty Chairs: BodyPods, UNCC SOA
- 2016 ACADIA 2016: Posthuman Frontiers: Data, Designers and Cognitive Machines, University of Michigan  
Visualizing Cities (CityVis.IO): Tidal Patterns of Human Mobility
- 2013 5<sup>th</sup> Architecture Triennale, Crete, Greece
- 2010 – 2008 Media Lab Sponsor Event, MIT
- 2010 Surrealestate, Artrages 2010, Boston
- 2009 Ecological Urbanism, Harvard GSD
- 2008 Billes Products Design Competition, New Orleans  
Design and Computation '08, MIT
- 2006 5<sup>th</sup> Hellenic Exhibition of Architecture, Patras, Greece
- 2001 High-Rise Buildings workshop, Netherlands Architecture Institute (NAI), Rotterdam, Netherlands

## EXHIBITIONS CURATED

- 2012 **Made in Greece PLUS Exhibition** / Museum of Science, Boston, MA  
Co-curator  
Conceptualized and organized an exhibition of contemporary built and unbuilt projects by young Greek architects that demonstrate how design thinking, technology innovation, and scientific research shape the human-made environment. Sponsored by the Boston Museum of Science.
- 2011 **Made in Greece Exhibition** / Harvard GSD  
Co-curator  
Organized an exhibition of 18 entries (out of 80 submissions) of contemporary built and unbuilt projects by young Greek architects. Sponsored by Harvard GSD.

## SKILLS

### SPECIAL

Proficient in most digital fabrication methods (CNC milling, waterjet/laser cutting, 3D printing, molding/casting, plastics, composites)

Proficient in modeling and simulation of complex socio-engineering systems using compartment models and multi-agent systems

Experienced in digital/analog electronics and physical computing (sensors, actuators, and microcontrollers)

## SOFTWARE

Full-stack web developer (Node.JS, MongoDB, Mongoose, Socket.IO) • Vensim • NetLogo • CATIA • Generative Components • Rhino • Grasshopper • 3DStudio • AutoCAD • Adobe Photoshop, InDesign, Illustrator

## RELEVANT COURSEWORK

### COURSES TAKEN AT HARVARD

CS171 Data Visualization • HKS API-105B Markets and Market Failures • ECON 2056a Market Design • ENG-SCI-231 Energy Technology • API-164 Energy Policy Analysis • EPS 239 The Consequences of Energy Systems

### COURSES TAKEN AT MIT

MAS.665 Development Ventures • 15.872 System Dynamics • ESD.342 Advanced System Architecture (network theory) • 11.433 Urban Economics • MAS.672 Human Computer Interaction • MAS.836 Sensor Technologies for Interactive Environments • MAS.863 How to Make (Almost) Anything • MAS.552 Mobility on Demand • 4.553 Professional Applications of Digital Fabrication in Building Industry • 1.001 Engineering Problem Solving in Java • 15.401 Finance Theory 1

## MEMBERSHIPS & AFFILIATIONS

### ACADEMIC

Association for Computing Machinery (ACM) (2018-current) • MIT Computational Making Group • Harvard Graduate Consortium on Energy & Environment • Harvard GSD Critical Digital group (leader 2011 - 2012) • MIT Energy Club (2011) • MIT Transportation Club (2009) • MIT Changing Places group (2010 - 2011) • MIT Living Labs group (2010 - 2011) • MIT System Dynamics group (2010) • MIT Smart Cities group (2008 - 2010) • MIT Design Computation group (2006 - 2008) • MOD Fleet Management group (founder-2009) • Fulbright Fellow (2006)

### PROFESSIONAL

National Technical Chamber of Greece (2004) • Licensed architect engineer in EU (2004) • Association of Greek Architects (2004)

## LANGUAGES

### HUMAN

English (fluent), Italian (competent), Greek (native).

### COMPUTER

Java, Processing, PYTHON, C, C++, C#, HTML5, CSS3, JavaScript, D3, NodeJS, MongoDB, Mongoose, Socket.IO, Leaflet.JS, MapBox.JS, JQuery, PHP, VB Script.