

KUAN BUTTS

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PROFESSIONAL EXPERIENCE

Data Scientist at Calthorpe Analytics [January 2017 - Present]

Development of programmatic regional transportation and land use modeling within geospatial analytics platform

Models include: vehicle miles travelled, transit accessibility, and trip lengths (all optimized to be in-memory of calculations)

Key tasks: optimizing 55+ hr. models via parallelized geospatial preprocesses, generating vectorized M:M network graphs

Technology: [Backend] Dask/Distributed Geo/Pandas analytics, PostgreSQL/PostGIS database, [Frontend] React/Redux, MapboxGL

Software Engineer & Fellow at Code for America [January 2016 – EoY 2016]

Software development, data analysis, gov't. organizational strategy (as Fellow from 1/16 - 11/16, Staff Engineer from 11/16 - EoY)

Fellowship Focus Area: Recidivism research in Salt Lake via communications software development, justice system data analyses

Civic Technology Fellow at Microsoft TCE New York [September 2015 – EoY 2015]

Government and civic technology-based software and data engineering research at the New York civic tech hub

Software Developer at MIT [September 2014 – August 2015]

Media Lab: front-end Angular developer; technical lead for CoAXs, software for bus and BRT route scenario modeling

Singapore-MIT Alliance for Research and Technology: full stack engineer, technical lead for Flocktracker application suite

Urban Planner Junior Staff at H3 Studio [September 2011 – August 2012]

GRADUATE RESEARCH ASSOCIATED

Graduate Researcher with MIT [September 2012 – September 2014]

Transport technology development, deployment, and operations analyses in rapidly urbanizing Dhaka, Bangladesh and Mexico City

Assistant for China Energy Efficient Urban Modeling Studio with MIT + Tsinghua University [February 2014 – July 2014]

Urban development research studio employing Energy Modeling “MIT Energy Pro Forma” software in Taiyuan, China

Intermodal Transit Station (CETRAM) Operations Researcher with Urban Travel Logistics [May 2013 – August 2013]

In-depth intermodal station mapping and analysis assessment of northern CETRAM operations in Mexico City, Mexico

Teaching Assistant for 11.303 MIT Complex Urban Projects Real Estate Development Studio [January 2013 – May 2013]

Urban planning studio for mid-career real estate professionals with on-site work in CBD1 Sao Paulo, Brazil

ARCHITECTURE INTERNSHIPS

Lim Design Group [2009], M+C Architects [2006], Ergo Architecture [2004]

FORMAL EDUCATION

Massachusetts Institute of Technology – Master of City Planning, Transportation Systems Planning [August 2012 – September 2014]

Select courses: Land Use and Transportation, Transportation Modeling, Transport Demand/Economics, Performance Optimization

Thesis: Iterative Methods in Adapting Mobile Technologies for Data Acquisition, A Case Study in St. Louis, Missouri

Washington University in St. Louis – Bachelor of Science, Architecture, Urban Planning Focus [August 2007 – May 2011]

Select courses: Architectural Design I-IV/Urban Analysis, Building Systems, Climate and Lighting Systems, Structures I/II

NONTRADITIONAL

Recurse Center [October 2014 - December 2014]

ACADEMIC PUBLICATIONS

Uneven Perceptions in Mobility Security: Digital Evidence from a Post-Industrial City.

Kuan Butts, P. Christopher Zegras. Submission to “Movilidades Desiguales,” by Santiagosmueve. October 2014.

Spatiotemporal Dynamics in Public Transport Personal Security Perceptions: Digital Evidence from Mexico City's Periphery.

P. Christopher Zegras, Kuan Butts, Arturo Cadena, Daniel Palencia. ICT for Transport: Opportunities and Threats

(P. Rietveld, M. Givoni, N. Thomopoulos, Eds.). Edward Elgar Publishing. May 2015.

Tracing a Path to Knowledge? Indicative use impacts of introducing a public transport map in Dhaka, Bangladesh.

P. Christopher Zegras, E. Eros, K. Butts, et al. Submission in “Cambridge Journal of Regions, Economy, and Society.” December 2014.

PERSONAL REFERENCES

P. Chris Zegras Associate Professor, Transportation and Planning. MIT [information available upon request]

John Paul Farmer Director of Technology and Civic Innovation. Microsoft NY [information available upon request]

Elizabeth Mitchell Director of Performance and Accountability. Salt Lake County. [information available upon request]

Albert Ching Head of Product. Thinkable / Fmr. Global Product Lead. Google [information available upon request]

TECHNICAL SKILLS

Languages JavaScript/Node/ES6 ***, Python ***, Java *, Ruby * (Stats) R **, STATA **. (Version Control) Git ***

Databases/Stores PostgreSQL ***, PostGIS ***, MySQL ***, SQLite3 ***, Redis **

Popular Libraries (Py) Flask **, Django **, Pandas ***, Dask/Distributed * (Node) Express *** (Front) React/Redux**, Angular1.x **, D3 ***

DevOps Amazon AWS **, Microsoft Azure **, Heroku *, Digital Ocean **

Drafting/Design AutoCAD ***, Rhinoceros3D ***, 3DS Max **, Adobe Creative Suite (Il, Ps, Id) ***

Geospatial Geopandas ***, ArcGIS **, QGIS **, (JS) Leaflet ***

*** Mastery, ** Competency, * Familiarity

VOLUNTARY COMMITMENTS

DataKind Developer Volunteer [Spring 2017 – Present]
Immigrant Legal Resource Center: Eligible-To-Naturalize Populations Explorer data visualization project
BetaNYC (Code for America New York City Brigade) Civic Hacker [2015]
Code for America New York Brigade volunteer, focusing on bus data acquisition and analysis (betanyc.us)
Urban Launchpad Mexico City Lead and Dhaka Team Member [Fall 2012 – Summer 2015]
Social venture dedicated to enhancing transit/institutional operations in rapidly urbanizing cities (urbanlaunchpad.org)
Brain Drain Collective Member [Fall 2011 – Fall 2012]
St. Louis transplants social startup specializing in urban resiliency issues (braindrain.co), spawned local startup CTY

AWARDS, GRANTS, AND SCHOLARSHIPS

CourtHack: National Center for State Courts Hackathon, Utah CIO & Supreme Court Justice “ClientComm” Winner [March 2016]
Swissnex + Data Canvas: Sense Your City Data Challenge, Maker Prize Award Recipient [Spring 2015]
Legatum Center Seed Grant for Innovative and Entrepreneurial Projects [Spring 2014]
MISTI 2.0 IAP Global Seed Fund Grant [January 2014]
William Emerson Travel Award, MIT Department of Urban Studies and Planning [Fall 2013]
MISTI Mexico Global Seed Fund [Summer 2013]
MIT Department of Urban Studies and Planning Tuition Scholarship [September 2012 to May 2014]
GOOD Ideas for Cities, St. Louis Award Recipient to Brain Drain Collaborative [March 2012]

SELECT PROJECTS

ClientComm: Criminal justice system case manager-client communications platform [2016]
Technical lead and researcher: Engaged in user research to identify pain points to design, build high-impact digital solution
NYC Bus Data API: Microsoft Civic Technology project implementing NYC MTA bus “big data” analytics [Fall 2015]
Lead Fellow. Duties: software engineering, project scoping and execution, transit systems research and analysis
CoAXs: Bus system scenario modeling tool for MIT Media Lab’s Changing Places Research Group [Summer 2015]
Project developer. Duties: Translate problem and project goals to executables, design and engineer software.
CETRAM operations research analysis (via MIT MISTI Global Seed Fund). Mexico City, Mexico [June 2013 - May 2014]
Project lead (partner Urban Travel Logistics). Duties: management, geospatial analysis, transit systems research and analysis
Dhaka Open Operation - MIT/Urban Launchpad. Dhaka, Bangladesh. [September 2012 - May 2013]
Research lead (Singapore-MIT Alliance for Research and Technology). Duties: software development, research management
CityPulse. St. Louis, MO [January 2012 – Present]
Founding member. Duties performed: product design and development, RFP production, project feasibility
The Federal District Master Plan. Omaha, NE. [December 2011 – June 2012]
Mayor Slay’s Inaugural Sustainability Summit. St. Louis, MO [November 2011 - May 2012]

EXHIBITIONS

Uneven Mobilities. Access in Contemporary Cities, International Conference. Santiago de Chile. [October 2014]
Universidad de Chile and PanAmerican Mobility Network presentation on St. Louis Flocktracking security analysis
Singapore-MIT Alliance for Research and Technology’s Future Urban Mobility Symposium 2013 + 2014 [January 2013 & 2014]
National University of Singapore poster session presenting ongoing Flocktracking efforts in Dhaka and Mexico City
What Should Be: Master plan proposal for St. Louis zoo south campus. Online at nextstl.com/what-should-be. [April 2011]
Pruitt-Igoe NOW: Envisioning use for former project housing, online at pruitigoenow.org. [March 2012 - November 2012]
GOOD Ideas for Cities: Networked activity monitors to highlight pedestrian activity in St. Louis. [December 2011 - March 2012]
Gutter to Gulf Goes Global: Comparative watershed research exhibition. [August 2011 - November 2010]

SPEAKING ENGAGEMENTS

Code for America Summit [November 2016]
Main stage speaker presenting on recidivism research and the development of ClientComm in Salt Lake County, Utah
Microsoft New York City Winter Demo Night [December 2015]
Presentation on development of NYC bus data API, a digital resource for real-time and historical bus performance and analyses
Universidad Autónoma Metropolitana Azcapotzalco Conferencia sobre Seguridad en transporte público y CETRAM [January 2014]
Presentation on quantitative methods of qualitative surveying and Flocktracker application case study
Regional Studies Association International Conference [December 2013]
Lecture on paper “Spatiotemporal Dynamics in Public Transit Security Perceptions: Digital Evidence from Mexico City”
GTFS for the Rest of Us at the World Bank [November 2013]
Speaker on transit data adaptation challenges for World Bank, Columbia, and MIT; online at gtfsfortherestofus.net

MEDIA COVERAGE

Kelly-Yahner, Kyle. “Closing The Communication Gaps In The Criminal Justice System.” [Twilio Developer Blog](#). 02/02/2017.
Desmarais, Chris. “ClientComm: IBM Watson aiding in casework.” [IBM Watson Cognitive Enterprise](#). 11/18/2016.
O’Reilly, Tim. “Stuff that Matters: Design Challenge.” [Code for America Medium](#). 06/30/2016.
Accuardi, Zak. “To Improve Transit, Be Smart About Delays.” The Connection. [TransitCenter](#). 05/17/2016. (TransportationCamp ’16. 09/26)
Burri, Anja. “Dhaka’s first bus map in the making.” The Dhaka Daily Star. 01/13/2013.
Schiller, Ben. “Building A Map For The Insane Public Transit Of Bangladesh.” [Fast Company Exist](#). 01/08/2013.