

John Alexis Guerra Gómez

I do **Visual Analytics**, i.e., I include the user in the big data analysis/science loop.

john.guerra[~at~]gmail.com

johnguerra.co

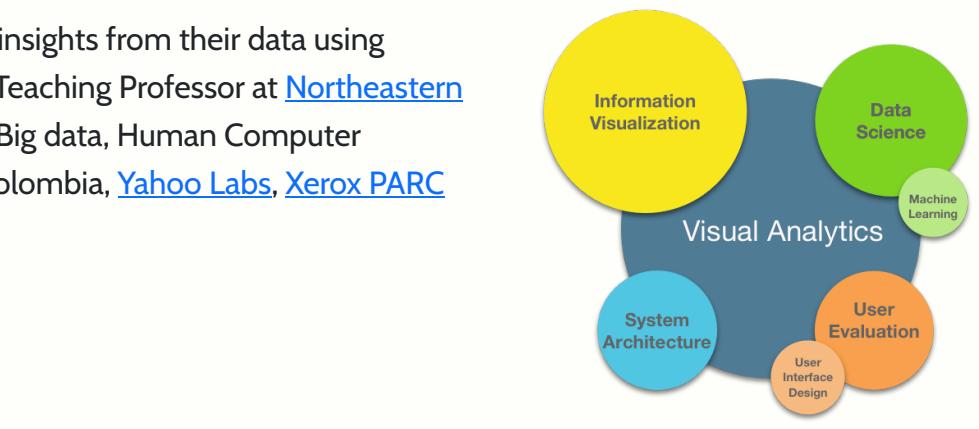
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In a nutshell

Information Visualization Researcher and Engineer. I help people extract insights from their data using interactive infovis and data science. PhD in Computer Science, Assistant Teaching Professor at [Northeastern University Bay Area](#). I conduct research on Visual Analytics, Accessibility, Big data, Human Computer Interaction and Web Development. Formerly at [UCBerkeley](#), [Uniandes Colombia](#), [Yahoo Labs](#), [Xerox PARC](#) and [DUTO](#).

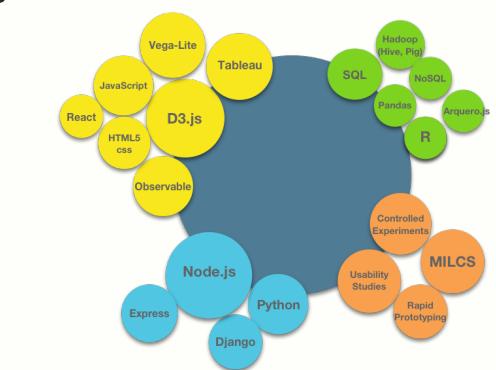
My Skills



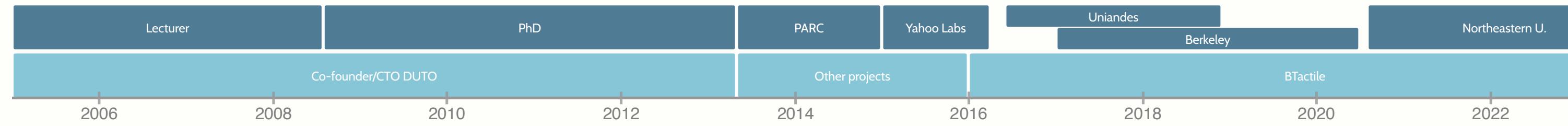
Experience

- 10 years as a researcher in Information Visualization. [Portfolio](#)
- 17 years as [a full stack engineer](#)
- 11 years on [teaching](#) at university level
- 30+ research [publications](#) at major conferences such as CHI, IEEEVIS, AVI, TRB
- Part of the Program Committee of toCHI 2016, Creativity and Cognition 2017/2018/2019, Graph Drawing 2017. Reviewer for CHI, IEEEVIS, AVI, EuroVis and UIST
- 15 years as public speaker.
- Entrepreneur co-founder of [DUTO](#), KebSolutions, [Tweetometro.co](#) and [BTactile](#), with more than [10 international entrepreneurship awards](#)

The tools and techniques I use



Experience and Education



Northeastern 08/2020 to Present	Assistant Teaching Professor <ul style="list-style-type: none">Conducting research in information visualization and accessibility.Teaching: Web Development, Database Management Systems and Information Visualization.
Uniandes 06/2016 to 06/2020	Assistant Professor (Tenure Track) <ul style="list-style-type: none">Conducted research in large dataviz, network visualization and photo visualization and accessibility, with the help of great students.Redesigned and taught the Visual Analytics (Fall '18, Fall '17, Fall '16) and Web Development classes (Fall '18, Spring '18, Spring '17, Fall '17).
Berkeley 01/2017 to 06/2020	Remote Lecturer and Course Coordinator <ul style="list-style-type: none">Course co-designer, course coordinator, and remote lecturer at Berkeley's online Master in Data Science. Teaching W209 Data Communication and Visualization.Completely redesigned the course materials to include the Visual Analytics theory fundamentals, and D3, Vega-Lite, and Tableau Practice. In collaboration with Andy ReaganPublished a series of videos on how to go from Visualization theory to practiceStudent projects: Summer 2020, Spring 2020, Fall 2019, Fall 2018, Spring 2018, Summer 2017, Fall 2017.
Yahoo Labs 01/2015 to 04/2016	Postdoctoral Researcher <ul style="list-style-type: none">Explored information visualization interfaces for navigating big repositories of photos.Helped redesign Flickr stats.Developed and deployed a visualization for better exploring the organizational units that is being used company wide.Modified Flickr code to add a new photo navigation visualization.Four papers accepted in two major conferences (CHI2016 and AVI2016).Created visual analytics for dozens of complex Yahoo datasets.
Parc 05/2013 to 12/2014	Research Scientist <ul style="list-style-type: none">Created Network Explorer a visual network analytics tool to explore hundreds of thousands of nodes, which was implemented, among others, in a Fraud, Waste and Abuse solution from Xerox and is being used for detecting fraud in Health Care networks.Constructed several dashboards using Tableau.Developed and integrated several other time-based and text based visualizations in 3 different products.
Other Projects	Inventor, Entrepreneur, Speaker <ul style="list-style-type: none">Co-founded and developed BTactile a platform to index 5000 tactile graphics for the blind from all over the world using Meteor.js and React.OpenVis 2017 Speaker with Untangling the Hairball, slides.Creator of open source software: RevealVizScroll, force-in-a-box, netClustering.js, navio.Co-creator of tweetometro.co a platform to monitor Twitter activity for the Colombian presidential election.



PhD

08/2008 to
04/2013

PhD Student, RA and TA.

- PhD and MSc in Computer Science under the supervision of [Dr. Ben Shneiderman](#) and [Dr. Catherine Plaisant](#) at the [University of Maryland \(2013\)](#).
- Created the **StemView** a visualization technique that represents 5 characteristics of change in trees.
- Created the **Bullet** a visualization glyph that represents 4 characteristics of change in trees.
- Implemented **TreeVersity2** a visual analytics web application to explore change in datasets over time.
- Implemented **TreeVersity** a visual analytics desktop application to compare changes between two trees.
- Conducted 13 case studies with 9 domain experts to validate TreeVersity and TreeVersity2.

Academic Lecturer

01/2005 to
01/2008

Full Time Lecturer

- Winner of the [Fulbright Science and Technology scholarship](#) (40 people awarded in the world yearly).
- Lecturer in a wide range of undergrad courses from Programming to Distributed Systems.

DUTO

06/2003 to
06/2013

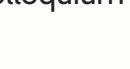
Co-founder and CTO

- Co-founder of [DUTO](#) and Co-creator of [IRIS](#) a system that allows blind students to see with their hands.
- CTO and responsible of all the software development in the company.
- Winner of more than [10 international entrepreneurship awards](#).

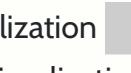
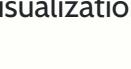
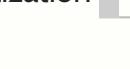
Academic contributions

Order by: Date Category Type

Type:

- Conference  Journal  Patent  Workshop 
- Magazine  Poster  Symposium  PhD Thesis 
- Doctoral Colloquium  Preprint 

Category:

- Visualization  Tree Visualization  Other 
- Accessibility  Network Visualization  Photo Visualization 
- Time Visualization 

Publications (46)

2022 [Digital Proxemics: Designing Social and Collaborative Interaction in Virtual Environments](#)

Julie R. Williamson, Joseph O'Hagan, John Alexis Guerra-Gomez, John H Williamson, Pablo Cesar, David A. Shamma

CHI '22: CHI Conference on Human Factors in Computing Systems

Conference Category: Other

2022 [Lessons Learned Building Low-Cost DIY Tactile Graphics and Conducting a Tactile Drawing Club in Colombia During COVID-19](#)

Maria Fernanda Zuniga-Zabala, John Alexis Guerra-Gomez

CHI EA '22: CHI Conference on Human Factors in Computing Systems Extended Abstracts

Conference Category: Accessibility

2021 [Monitoring of the refractory lining in a shielded electric arc furnace: An online multitarget regression trees approach](#)

Jersson X. Leon-Medina, Jaiber Camacho-Olarte, Bernardo Rueda, Wilmar Vargas, Luis Bonilla, Janneth Ruiz, Jorge Sofrony, John A. Guerra-Gomez, Felipe Restrepo-Calle, Diego

A. Tibaduiza

Structural Control and Health Monitoring 2022

Journal Category: Other

2021 [Built environment profiles for Latin American urban settings: The SALURBAL study](#)

Olga L. Sarmiento, Andrés F. Useche, Daniel A. Rodriguez, Iryna Dronova, Oscar Guaje, Felipe Montes, Ivana Stankov, Maria Alejandra Wilches, Usama Bilal, Xize Wang, Luis A.

Guzmán, Fabian Peña, D. Alex Quistberg, John A. Guerra-Gomez, Ana V. Diez Roux

PLoS ONE 16(10): e0257528

Journal Category: Other

2021 [A State-of-the-Art Survey of Tasks for Tree Design and Evaluation with a Curated Task Dataset](#)

Aditeya Pandey, Uzma Haque Syeda, Chaitya Shah, John Alexis Guerra-Gomez, Michelle Borkin

IEEE transactions on visualization and computer graphics

Conference Category: Tree Visualization

2020 [Multimorbidity patterns among COVID-19 deaths: proposal for the construction of etiological models](#)

Julían A. Fernández-Niño, John A. Guerra-Gómez, Alvaro J. Idrovo

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7778468/>

Journal Category: Other

2020 [Visual Analytics Applied to the Monitoring of High-Cost Medicines used in Rheumatology, in a Hospital of High Complexity in Latin America](#)

Armando Acosta, Ricardo Portocarrero, Adriana Beltran Ostos, Hoover Quitian Reyes, Camila Camargo Rodriguez, Sergio Moreno, John Guerra-Gomez

PANLAR 2020

Poster Category: Other

2020 [Digital collaborator: Augmenting task abstraction in visualization design with artificial intelligence](#)

Aditeya Pandey, Yixuan Zhang, John A. Guerra-Gomez, Andrea G. Parker, Michelle A. Borkin

Preprint Category: Other

2019 [A Visual Analytics Framework Case Study: Understanding Colombia's National Administrative Department of Statistics Datasets](#)

Pierre Raimbaud, Jaime Camilo Espitia Castillo, John Alexis Guerra-Gomez

Journal Category: Visualization

2019 [Tactiled: Towards More and Better Tactile Graphics Using Machine Learning](#)

Ricardo Gonzalez, Carlos Gonzalez, John Alexis Guerra-Gomez

Poster Category: Accessibility2019 [Continuous Delivery of Software on IoT Devices](#)Diego Prens, Iván Alfonso, Kelly Garcés, **John Alexis Guerra-Gomez**

MODELS 2019

Poster Category: Other2019 [BioCircle: A Tool for Summarizing and Comparing Taxonomic Profiles out of Biological Sequence Alignments](#)Meili Vanegas-Hernandez, Fabio Andres Lopez-Corredor, Tiberio Hernandez, Alejandro Reyes, **John Alexis Guerra-Gomez**

BioVis@ISMB 2019

Conference Category: Visualization2019 [Extracting and visualizing a new classification system for Colombia's National Administrative Department of Statistics. A visual analytics framework case study.](#)Pierre Raimbaud, Jaime Camilo Espitia Castillo, **John Alexis Guerra-Gomez**

V Jornadas Iberoamericanas de Interacción Humano-Computador 2019

Conference Category: Visualization2018 [Opening the black-box: Towards more Interactive and Interpretable Machine Learning](#)Fabian C. Peña, **John Alexis Guerra-Gomez**

MLUI 2018: Machine Learning from User Interactions for Visualization and Analytics

Workshop Category: Visualization2019 [Understanding world happiness: An information visualization application case of the World Happiness Report](#)Nycol Bazuerto-Gomez, Carlos F. Torres, Raul Gutierrez, Mario Chamorro, Claire Bulger, Tiberio Hernandez, **John Alexis Guerra-Gomez**

Communications in Computer and Information Science, Springer

Journal Category: Visualization2018 [Understanding world happiness: An information visualization application case of the World Happiness Report](#)

Nycol Bazuerto-Gomez, Carlos F. Torres, Raul Gutierrez, Mario Chamorro, Claire Bulger, Tiberio Hernandez, John A. Guerra-Gomez

IV Jornadas Iberoamericanas de Interacción Humano Computador

Conference Category: Visualization2017 [Visual Tools for the Exploration of Growth Data in a cohort of Kangaroo Infants during their first year of life](#)Deisy J. Díaz, Julieta Villegas, **John Alexis Guerra-Gomez**, Nathalie Charpak, José Tiberio Hernández

Proceedings of the 2017 Workshop on Visual Analytics in Healthcare (VAHC 2017)

Workshop Category: Visualization2017 [Good practices learned from designing a more interactive project based visual analytics course](#)**John Alexis Guerra-Gomez**, Peter Salz, Shah Rukh Humayoun, Diana Fernandez, Klaus Madlener, Hans Hagen, José T. Hernandez

In Proceedings of 6th International Research Symposium on Problem Based Learning, Bogotá, Colombia

Conference Category: Visualization2017 [CWI-ADE2016 Dataset: Sensing nightclubs through 40 million BLE packets](#)Sergio Cabrero, Jack Jansen, Thomas Roggla, **John Alexis Guerra-Gomez**, David A. Shamma, and Pablo Cesar

in Proceedings of the ACM Multimedia Systems Conference (ACM MMSys 2017), Taiwan

Conference Category: Visualization2017 [BTactile: the place to find tactile graphics and to learn how to create them](#)**John Alexis Guerra-Gomez**, María Fernanda Zúñiga Zabala

Presented at the 32nd CSUN Assistive Technology Conference, San Diego

Conference Category: Accessibility2016 [Lessons learned from designing and implementing Network Explorer, a real world network visual analytics tool using open source software](#)**John Alexis Guerra-Gomez**

IEEE Vis 2016, Workshop on Visualization in Practice: Open Source Visualization and Visual Analytics Software (VIP)

Workshop Category: Network Visualization2016 [Identifying Best Practices for Visualizing Photo Statistics and Galleries using Treemaps](#)**John Alexis Guerra-Gomez**, Cati Boulanger, Sanjay Kairam, David A. Shamma

In Proceedings of the International Working Conference on Advanced Visual Interfaces (AVI '16), Paolo Buono, Rosa Lanzilotti, and Maristella Matera (Eds.). ACM, New York, NY,

USA, 60-63

Conference Category: Photo Visualization2016 [Design, Implementation, and Real World Deployment of the Network Explorer, a Large Network Visual Analytics Tool](#)**John Alexis Guerra-Gomez**, Aaron Wilson, Juan Liu, Dan Davies, Peter Jarvis and Eric Bier

In Proceedings of the International Working Conference on Advanced Visual Interfaces (AVI '16), Paolo Buono, Rosa Lanzilotti, and Maristella Matera (Eds.). ACM, New York, NY, USA, 108-111

Conference Category: Network Visualization2016 [Graph analysis for detecting fraud, waste, and abuse in healthcare data](#)Juan Liu, Eric Bier, Aaron Wilson, Tomo Honda, Sricharan Kumar, Leilani Gilpin, **John Alexis Guerra-Gomez**, and Daniel Davies

AI Magazine, 37(2), 33-47

Journal Category: Network Visualization2016 [The 32 Days Of Christmas: Understanding Temporal Intent in Image Search Queries](#)Frank Bentley, Joseph 'Jofish' Kaye, David A. Shamma, **John Alexis Guerra-Gomez**

In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16). ACM, New York, NY, USA, 5710-5714

Conference Category: Photo Visualization2016 [Snap Decisions? How Users, Content, and Aesthetics Interact to Shape Photo Sharing Behaviors](#)Sanjay Kairam, Jofish Kaye, **John Alexis Guerra-Gomez**, David Ayman Shamma

In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16). ACM, New York, NY, USA, 113-124

Conference Category: Photo Visualization2015 [Methods and systems for determining query date ranges](#)

Patent Category: Visualization

2015 [Graph analysis for detecting fraud, waste, and abuse in healthcare data](#)

Juan Liu, Eric Bier, Aaron Wilson, Tomo Honda, Sricharan Kumar, Leilani Gilpin, **John Alexis Guerra-Gomez**, and Daniel Davies

In Proceedings of the Twenty-Ninth AAAI Conference on Artificial Intelligence (AAAI'15). AAAI Press 3912-3919

Conference Category: Network Visualization

2015 [Discovering temporal changes in hierarchical transportation data: Visual analytics & text reporting tools](#)

John Alexis Guerra-Gomez, Michael L. Pack, Catherine Plaisant, Ben Shneiderman

Transportation Research Part C: Emerging Technologies, Volume 51, February 2015, Pages 167-179

Journal Category: Tree Visualization

2013 [Visualizing Change over Time Using Dynamic Hierarchies: TreeVesity2 and the StemView](#)

John Alexis Guerra-Gomez, Michael L. Pack, Catherine Plaisant, Ben Shneiderman, B

IEEE transactions on visualization and computer graphics, 19(12), 2566-75

Conference Category: Tree Visualization

2013 [Exploring differences in multivariate datasets using hierarchies, An interactive information visualization Approach](#)

John Alexis Guerra-Gomez

Computer Science Department. University Maryland at College Park

PhD Thesis Category: Tree Visualization

2013 [TreeVesity: Interactive Visualizations for Comparing Hierarchical Datasets](#)

John Alexis Guerra-Gomez, Audra Buck-Coleman, Catherine Plaisant, Ben Shneiderman

In Proceedings of the Transportation Research Board 92th annual meeting, The National Academies, Washington, DC (2013)

Conference Category: Tree Visualization

2012 [TreeVesity: Visualizing Hierarchical Data for Value with Topology Changes](#)

John Alexis Guerra-Gomez, Audra Buck-Coleman, Catherine Plaisant, Ben Shneiderman

Design Research Society Conference Bangkok 2012

Conference Category: Tree Visualization

2011 [TreeVesity: Comparing tree structures by topology and node's attributes differences](#)

John Alexis Guerra-Gomez, Audra Buck-Coleman, Catherine Plaisant, Ben Shneiderman

In VAST 2011 - IEEE Conference on Visual Analytics Science and Technology 2011, Proceedings (pp. 275-276). IEEE

Conference Category: Tree Visualization

2011 [TreeVesity: Comparing Tree Structures by Topology and Node's Attributes Differences](#)

John Alexis Guerra-Gomez

Doctoral Colloquium, IEEE VisWeek 2011

Doctoral Colloquium Category: Tree Visualization

2011 [Visualization temporal events in traffic incidents](#)

John Alexis Guerra-Gomez

Guest presenter at the 6th International Symposium on Visualization in Transportation

Symposium Category: Tree Visualization

2011 [TreeVesity: Comparing Tree Structures by Topology and Node Attribute Values](#)

John Alexis Guerra-Gomez, Catherine Plaisant, Ben Shneiderman

HCIL Symposium 2011

Symposium Category: Tree Visualization

2011 [LifeFlow: Visualizing an Overview of Event Sequences](#)

Krist Wongsuphasawat, **John Alexis Guerra-Gomez**, Catherine Plaisant, Taowei David Wang, Meirav Taieb Maimon and Ben Shneiderman

In Proceedings of the 2011 Annual Conference on Human Factors in Computing Systems (CHI'11), 1747-1756

Conference Category: Time Visualization

2011 [Colombian Patent No. 05-037765 "Sistema para la percepción de imágenes por medio del tacto por medio de un guante de imanes" \(System for the perception of images by means of touch using a glove of magnets\). Resolution 18963 of April 5 2011](#)

Maria Fernanda Zúñiga Zabala, John Alexis Guerra Gómez and Felipe Restrepo Calle

In process with the WIPO (World Intellectual Property Organization) since June 2006

Patent Category: Accessibility

2011 [Analyzing Incident Management Event Sequences with Interactive Visualization](#)

John Alexis Guerra-Gomez, Krist Wongsuphasawat, Taowei David Wang, Michael Pack and Catherine Plaisant

In Proceedings of the Transportation Research Board 90th annual meeting, The National Academies, Washington, DC

Conference Category: Time Visualization

2007 [Ear un software de entrenamiento auditivo musical \(Ear a musical auditory training software\)](#)

David Hernandez Niño, Tilio Echeverry Silva, **John Alexis Guerra-Gomez**

Scientia et Technica Magazine. Universidad Tecnológica de Pereira. Year XV, Edition 41.

Magazine Category: Other

2006 [International patent registration PCT/IB2006/001502 System for the perception of images with touch](#)

Maria Fernanda Zuniga Zabala, **John Alexis Guerra-Gomez**, Felipe Restrepo Calle, Jose Alfredo Jaramillo Villegas

In process with the WIPO (World Intellectual Property Organization) since June 2006

Patent Category: Accessibility

2007 [System for the perception of images through touch](#)

Maria Fernanda Zuniga Zabala, **John Alexis Guerra-Gomez**, Felipe Restrepo Calle, Jose Alfredo Jaramillo Villegas

USA Patent application number 20080174566

Patent Category: Accessibility

2006 [Modelo de solución de enrutamiento de datos a bajo costo basado en software libre \(Low cost routing solution model based on free software\)](#)

Maria Fernanda Zúñiga Zabala, Felipe Restrepo Calle, John Alexis Guerra-Gomez

Scientia et Technica Magazine. Universidad Tecnológica de Pereira. Year XI, Edition 28.

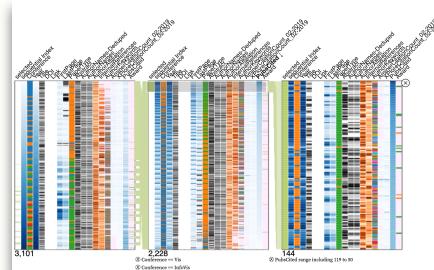
Magazine Category: Accessibility

John Alexis Guerra-Gomez, María Fernanda Zúñiga Zabala, Felipe Restrepo Calle

Congreso de Seguridad en Cómputo e Inteligencia Artificial 2004(Computing security and AI workshop). Universidad Tecnológica de Pereira

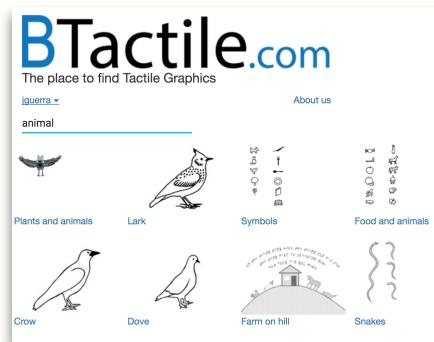
Conference Category: Other

Things I have built



[Navio](#)

A visualization widget that you can use to explore large data



[BTactile](#)

A search engine for tactile images for the blind.



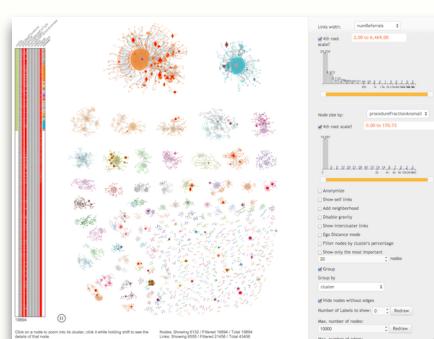
[Tweetometro](#)

Twitter monitor and analyzer for different topics



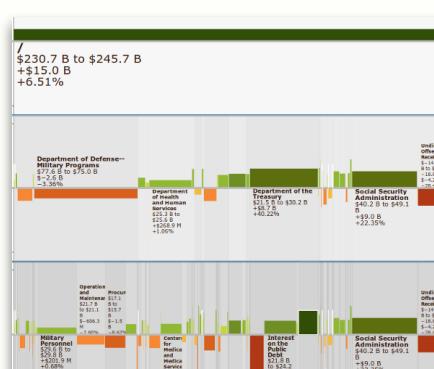
[Phototreemap](#)

Representing groups of photos with numeric attributes. Work in progress, pending publication.



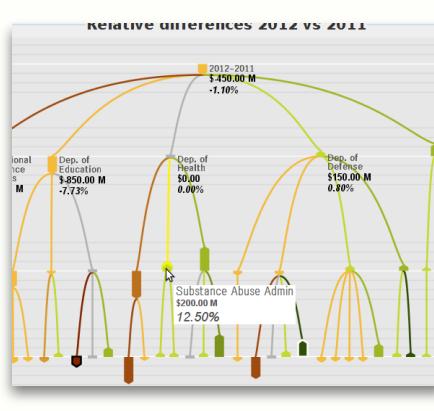
[Network Explorer](#)

Visual analytics tool for understanding large networks. Pending publication.



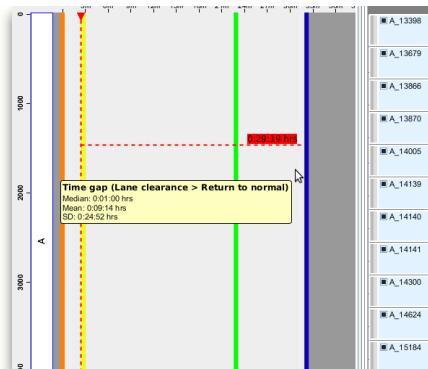
[TreeVersity v2](#)

Visualizing five dimensions of change in a dataset changing over time using hierarchies



[TreeVersity v1](#)

Comparing changes between trees on structure and node values.



LifeFlow

A visual analytics tool for temporal categorical data. Helped developing the comparison modules as part of a broader project.



IRIS

A system to allow blind children to see colors and shapes with their hands

My Observable Notebooks

Min Likes

10

[Force in a Box](#)
♡ 49
Apr 13 2021

[Observable IEEEVIS 2021 tutorial: Quick and Effective Visualization Prototyping with...](#)
♡ 32
Apr 11 2022

[d3.stack with d3.group](#)
♡ 23
Feb 22 2023

[SpaceTree](#)
♡ 20
Apr 09 2023

[SQL Query Visualizer](#)
♡ 17
Apr 14 2022

[Parallel Sets](#)
♡ 16
Mar 25 2021

[Choose your forces](#)
♡ 14
Jul 14 2022

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♡ 13
May 16 2022

[Smart Labels](#)
♡ 11
Jul 13 2023

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♡ 10
Jun 22 2021

[D3 Network Visualization Playground](#)
♡ 10
Jul 14 2021

[UMAP playground](#)
♡ 45
Apr 19 2023

[vega-Lite API Selection Methods](#)
♡ 29
Sep 30 2022

[Meta Segment Anything](#)
♡ 22
Aug 15 2023

[LineUp](#)
♡ 20
Jul 28 2021

[Network visualization Vega-Lite](#)
♡ 17
Apr 01 2022

[Navio](#)
♡ 15
Sep 19 2022

[Navio Load](#)
♡ 13
Jul 19 2023

[Zoomable Variable Size Icicle](#)
♡ 12
Apr 01 2021

[Agenda del D3 Meetup en Español](#)
♡ 11
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♡ 10
Apr 07 2021

[D3 Force Boundary](#)
♡ 37
Sep 18 2020

[D3 data binding v3 to v5](#)
♡ 25
Jul 08 2019

[Marks and Channels in D3](#)
♡ 21
Sep 02 2020

[Search Checkbox](#)
♡ 20
Mar 20 2023

[Intro to D3](#)
♡ 17
Aug 06 2019

[IIEEEVIS Tweets Network All Data](#)
♡ 15
Jul 14 2022

[Tree_Value](#)
♡ 13
May 18 2023

[D3 Likert Scale](#)
♡ 12
Aug 28 2020

[Airtable](#)
♡ 11
Mar 30 2022

[Explore your Twitter Archive](#)
♡ 10
Feb 08 2021

[d3.stack with d3.nest](#)
♡ 10
Sep 12 2020

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♡ 36
Oct 18 2021

[Multi Auto Select](#)
♡ 23
Apr 06 2023

[Mapbox D3](#)
♡ 20
Jun 16 2022

[Relative centering force](#)
♡ 20
Apr 06 2021

[d3.forceRadial](#)
♡ 17
May 25 2019

[Vega crossfilter](#)
♡ 14
Apr 21 2021

[Vega-Lite-API Layer + Facet](#)
♡ 13
Sep 30 2022

[Plot Isotype dot plot](#)
♡ 12
Aug 14 2021

[Resultados de las Elecciones Presidenciales en Bogotá 2022 por Puestos de Votación](#)
♡ 10
Sep 28 2022