

# John Alexis Guerra Gómez

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

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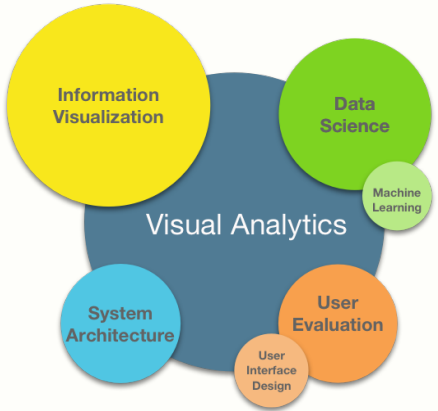
## In a nutshell

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](#).

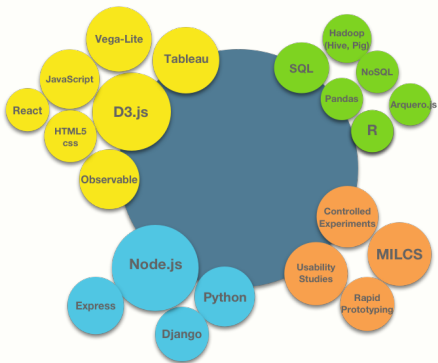
## Experience

- 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](#)

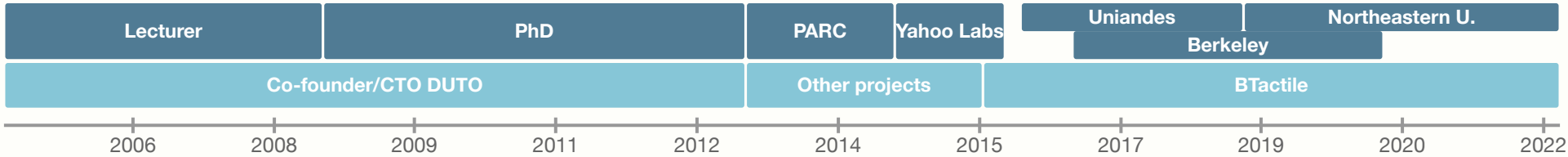
## My Skills



## The tools and techniques I use



## Experience and Education



## Things I'm proud of

Northeastern	<ul style="list-style-type: none"><li>Conducting research in information visualization and accesibility.</li><li>Teaching: Web Development, Database Management Systems and Information Visualization.</li></ul>
Uniandes	<ul style="list-style-type: none"><li>Conducted research in <a href="#">large dataviz</a>, <a href="#">network visualization</a> and <a href="#">photo visualization</a> and accessibility, with the help of great <a href="#">students</a>.</li><li>Redesigned and taught the <a href="#">Visual Analytics</a> (Fall '18, Fall '17, Fall '16) and <a href="#">Web Development</a> classes (Fall '18, Spring '18, Spring '17, Fall '17).</li></ul>
Berkeley	<ul style="list-style-type: none"><li>Remote Lecturer at <a href="#">Berkeley's online Master in Data Science</a>. Teaching W209 Data Communication and Visualization. Student projects: <a href="#">Fall '18</a>, <a href="#">Summer '18</a>, <a href="#">Spring '18</a>, <a href="#">Fall '17</a>, <a href="#">Summer '17</a>.</li></ul>
Yahoo Labs	<ul style="list-style-type: none"><li>Exploring information visualization interfaces for navigating big repositories of photos.</li><li>Helped redesigned <a href="#">Flickr stats</a>.</li><li>Developed and deployed a visualization for better exploring the organizational units that is being used company wide.</li><li>Modified Flickr code to add a new photo navigation visualization.</li><li>Four papers accepted in two major conferences (CHI2016 and AVI2016).</li><li>Created visual analytics for dozens of complex Yahoo datasets.</li></ul>
Parc	<ul style="list-style-type: none"><li>Created <a href="#">Network Explorer</a> 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.</li><li>Constructed several dashboards using Tableau.</li><li>Developed and integrated several other time-based and text based visualizations in 3 different products.</li></ul>
Other Projects	<ul style="list-style-type: none"><li>Co-founded and developed <a href="#">BTactile</a> a platform to index 5000 tactile graphics for the blind from all over the world using Meteor.js and React.</li><li><a href="#">OpenVis 2017 Speaker</a> with <a href="#">Untangling the Hairball</a>, <a href="#">slides</a>.</li><li>Creator of open source software: <a href="#">RevealVizScroll</a>, <a href="#">force-in-a-box</a>, <a href="#">netClustering.js</a>, <a href="#">navio</a>.</li><li>Co-creator of <a href="#">tweetometro.co</a> a platform to monitor Twitter activity for the Colombian presidential election.</li></ul>
PhD	<ul style="list-style-type: none"><li><b>PhD</b> and <b>MSc</b> in Computer Science under the supervision of <a href="#">Dr. Ben Shneiderman</a> and <a href="#">Dr. Catherine Plaisant</a> at the <a href="#">University of Maryland (2013)</a>.</li><li>Created the <b>StemView</b> a visualization technique that represents 5 characteristics of change in trees.</li><li>Created the <b>Bullet</b> a visualization glyph that represents 4 characteristics of change in trees.</li><li>Implemented <a href="#">TreeVersity2</a> a visual analytics web application to explore change in datasets over time.</li><li>Implemented <a href="#">TreeVersity</a> a visual analytics desktop application to compare changes between two trees.</li><li>Conducted 13 case studies with 9 domain experts to validate TreeVersity and TreeVersity2.</li></ul>
Academic Lecturer	<ul style="list-style-type: none"><li>Winner of the <a href="#">Fulbright Science and Technology scholarship</a> (40 people awarded in the world yearly).</li><li>Lecturer in a wide range of undergrad courses from Programming to Distributed Systems.</li></ul>
DUTO	<ul style="list-style-type: none"><li><b>Co-founder</b> of <a href="#">DUTO</a> and Co-creator of <a href="#">IRIS</a> a system that allows blind students to see with their hands.</li><li><b>CTO</b> and responsible of all the software development in the company.</li><li>Winner of more than <a href="#">10 international entrepreneurship awards</a>.</li></ul>



Publications (46)

Visualization (10)

2019 [BioCicle: 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

2019 [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

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

2018 [Understanding world happiness: An information visualization application case of the World Happiness Report](#)  
Nychol Bazurto-Gomez, Carlos F. Torres, Raul Gutierrez, Mario Chamorro, Claire Bulger, Tiberio Hernandez, John A. Guerra-Gomez  
IV Jornadas Iberoamericanas de Interacción Humano Computador  
Conference

2018 [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

2019 [Understanding world happiness: An information visualization application case of the World Happiness Report](#)  
Nychol Bazurto-Gomez, Carlos F. Torres, Raul Gutierrez, Mario Chamorro, Claire Bulger, Tiberio Hernandez, **John Alexis Guerra-Gomez**  
Communications in Computer and Information Science, Springer  
Journal

2017 [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

2017 [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

2017 [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

2015 [Methods and systems for determining query date ranges](#)  
Frank Richard Bentley, Joseph Nathaniel Kaye, David Ayman Shamma, **John Alexis Guerra-Gomez**  
US Patent Application, US20170024388A1  
Patent

Photo Visualization (3)

2016 [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

2016 [The 32 Days Of Christmas: Understanding Temporal Intent in Image Search Queries](#)

Tree Visualization (10)

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

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

2013 [Visualizing Change over Time Using Dynamic Hierarchies: TreeVersity2 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

2013 [Exploring differences in multivariate datasets using hierarchies, An interactive information visualization Approach](#)  
**John Alexis Guerra-Gomez**  
Computer Science Deparment. University Maryland at College Park  
PhD Thesis

2013 [TreeVersity: 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

2012 [TreeVersity: 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

2011 [TreeVersity: 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

2011 [TreeVersity: Comparing Tree Structures by Topology and Node's Attributes Differences](#)  
**John Alexis Guerra-Gomez**  
Doctoral Colloquium, IEEE VisWeek 2011  
Doctoral Colloquium

2011 [Visualization temporal events in traffic incidents](#)  
**John Alexis Guerra-Gomez**  
Guest presenter at the 6th International Symposium on Visualization in Transportation  
Symposium

2011 [TreeVersity: Comparing Tree Structures by Topology and Node Attribute Values](#)  
**John Alexis Guerra-Gomez**, Catherine Plaisant, Ben Shneiderman  
HCIL Symposium 2011  
Symposium

Network Visualization (4)

2016 [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

2016 [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



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](#)

2016 [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](#)

Other (10)

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](#)

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](#)

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](#)

2020 [Multimorbidity patterns among COVID-19 deaths: proposal for the construction of etiological models](#)  
Julián A. Fernández-Niño, John A. Guerra-Gómez, Alvaro J. Idrovo  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7778468/>  
[Journal](#)

2020 [Visual Analytics Applied to the Monitoring of High-Cost Medicines used in Rheumatology, in a Hospital of High Complexityin Latin America](#)  
Armando Acosta, Ricardo Portocarrero, Adriana Beltran Ostos, Hoover Quitian Reyes, Camila Camargo Rodriguez, Sergio Moreno, John Guerra-Gomez  
PANLAR 2020  
Poster

2019 [Continuous Delivery of Software on IoT Devices](#)  
Diego Prens, Iván Alfonso, Kelly Garcés, **John Alexis Guerra-Gomez**  
MODELS 2019  
Poster

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](#)

2007 [Ear un software de entrenamiento auditivo musical \(Ear a musical auditive training software\)](#)  
David Hernandez Niño, Tulio Echeverry Silva, **John Alexis Guerra-Gomez**  
Scientia et Technica Magazine. Universidad Tecnológica de Pereira. Year XV, Edition 41.  
[Magazine](#)

2006 [Modelo de solución de enrutamiento de datos a bajo costo basado en software libre \(Low cost routing solution model based on free software\)](#)  
Myriam Marin Ospina, Ruth Andrea Martín Bedoya, **John Alexis Guerra-Gomez**  
Scientia et Technica Magazine. Universidad Tecnológica de Pereira. Year XII, Edition 32.  
[Magazine](#)

2004 [El gusano genético \(The genetic snake\)](#)  
**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](#)

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](#)

2016 [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](#)

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](#)

Accessibility (7)

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](#)

2019 [Tactiled: Towards More and Better Tactile Graphics Using Machine Learning](#)  
Ricardo Gonzalez, Carlos Gonzalez, **John Alexis Guerra-Gomez**  
ASSETS 2019  
Poster

2017 [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](#)

2005 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  
María Fernanda Zúñiga Zabala, John Alexis Guerra Gómez and Felipe Restrepo Calle  
In process with the WIPO (World Intellectual Property Organization) since June 2006  
[Patent](#)

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](#)

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](#)

2005 [Proyecto IRIS](#)  
Maria Fernanda Zúñiga Zabala, Felipe Restrepo Calle, **John Alexis Guerra-Gomez**  
Scientia et Technica Magazine. Universidad Tecnológica de Pereira. Year XI, Edition 28.  
[Magazine](#)

## Time Visualization (2)

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](#)

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](#)