KANIT (HAM) WONGSUPHASAWAT (CURRICULUM VITAE)

kanitw@gmail.com @kanitw More information and demos at http://kanitw.github.io Last Updated Oct 30, 2018

EDUCATION

University of Washington (2018)
MS & PhD Computer Science & Engineering
Area: Human-Computer Interaction, Data Visualization, Data Science
Advisor: Dr. Jeffrey Heer
★ Dissertation Award

Stanford University (2013)
MS Management Science & Engineering
Area: Human-Computer Interaction, Entrepreneurship
★ Awarded Fulbright Fellowship

Chulalongkorn University (2010)
BEng Computer Engineering
★ Awarded Gold Medal & HM The King Scholarship (ranked 1st of 800+ students)

EMPLOYMENT

Apple Inc. – Research Scientist 2018-Present
Lead a team to research and develop data visualization and interactive tools for data science and machine learning

Interactive Data Lab, University of Washington – Graduate Researcher (Data Visualization Tools) 2013-2018
- Led the design, development, and evaluation of Voyager, a recommendation-powered visualization tool for exploratory data analysis and the CompassQL visualization recommender engine – manage a team of 5 research assistants (★ Won Knight Prototype Grant, adopted by Jupyter data science community) – *http://github.com/vega/voyager* & *http://github.com/vega/compassql*
- Co-led the design & development of the Vega-Lite high-level grammar for interactive visualizations–manage a team of 7 research assistants (30k NPM downloads/month; wrapped in Python as Altair; shipped with JupyterLab; used at leading tech companies including Apple, Google, Microsoft, Netflix, Twitter and Uber; used for teaching at top universities including Stanford, CMU, UMD, and UW) – *http://vega.github.io/vega-lite*
- Co-designed declarative interaction model for the Vega visualization grammar – *http://vega.github.io/vega*
- Conducted interviews with data scientists to understand current practices and difficulties in exploratory data analysis

Google Inc. – Software Engineering Intern (Big Picture Group, Google Research) 2015
- Led the design & development of TensorFlow Graph Visualizer, a tool to visualize dataflow graphs of deep learning models in TensorFlow (with Dr. Martin Wattenberg, Dr. Fernanda Viégas and Google Brain) – Shipped with Google's TensorFlow library as a part of TensorBoard – https://www.tensorflow.org/get_started/graph_viz

Trifacta Inc. – Software Engineering Intern 2014
- Designed & prototyped intelligent user interfaces for data cleaning and transformations

Tableau Software Inc. – Research Intern (Visual Analysis Team) 2013
- Designed & prototyped visualization recommender system (with Dr. Jock Mackinlay & Dr. Anushka Anand) ★ US Patented

HCI Group, Stanford University – Graduate Researcher 2013
- Research on peer assessment system for massive online classroom (with Dr. Scott Klemmer & Dr. Chinmay Kulkarni)

Venture Lab, Stanford University – Graduate Researcher & UX Lead 2012-2013
- Led initial user experience design for Venture-lab, a MOOC platform (spun off as NovoEd)

Google Inc. - *Software Engineering Intern (HCI Group, Google Research)* 2012
- Researched & developed a mobile social software prototype (with Dr. Elin Pedersen and Dr. Bay-Wei Chang)

Thomson Reuters Software - *Associate Software Engineer* 2010-2011
- Led UI Design for Alerting and Monitoring System of Thomson Reuters Market Data System

Singha Corporation (Thailand) - *Management Trainee Intern* 2010
- Organized regional marketing campaign to increase sales & cross-functional management and business training

Thomson Reuters Software - *Software Engineering Intern* 2009
- Developed test cases management system for data access control product

REFEREED PAPERS

P9. Understanding and Visualizing Data Iteration in Machine Learning
Fred Hohman, Kanit Wongsuphasawat, Mary Beth Kery, Kayur Patel.
ACM Human Factors in Computing Systems (CHI) 2020. [24% Acceptance Rate]

P8. Tempura: Query Analysis with Structural Templates
Tongshuang Wu, Kanit Wongsuphasawat, Donghao Ren, Kayur Patel, Chris Dubois.
ACM Human Factors in Computing Systems (CHI) 2020. [24% Acceptance Rate]

P7. Visualizing Dataflow Graphs of Deep Learning Models in TensorFlow

Kanit Wongsuphasawat, Daniel Smilkov, James Wexler, Jimbo Wilson, Dandelion Mané, Doug Fritz, Fernanda Viégas, Martin Wattenberg.
IEEE Trans. Visualization & Computer Graphics (VAST) 2017. [23% Acceptance Rate] ★ Best Paper Award (Top 1)

P6. Voyager 2: Augmenting Visual Analysis with Partial View Specifications
Kanit Wongsuphasawat, Zening Qu, Dominik Moritz, Riley Chang, Felix Ouk, Anushka Anand, Jock Mackinlay, Bill Howe, Jeffrey Heer.
ACM Human Factors in Computing Systems (CHI) 2017. [25% Acceptance Rate]

P5. GraphScape: A Model for Automated Reasoning about Visualization Similarity and Sequencing.
Younghoon Kim, Kanit Wongsuphasawat, Jessica Hullman, Jeffrey Heer.
ACM Human Factors in Computing Systems (CHI) 2017. [25% Acceptance Rate] ★ Best Paper Honorable Mention (Top 5%)

P4. Vega-Lite: A Grammar of Interactive Graphics.
Arvind Satyanarayan, Dominik Moritz, Kanit Wongsuphasawat, Jeffrey Heer.
IEEE Trans. Visualization & Computer Graphics (InfoVis) 2016. [22% Acceptance Rate] ★ Best Paper Award (Top 1)

P3. Towards A General-Purpose Query Language for Visualization Recommendation.
Kanit Wongsuphasawat, Dominik Moritz, Anushka Anand, Jock Mackinlay, Bill Howe, Jeffrey Heer.
ACM SIGMOD Human-in-the-Loop Data Analysis (HILDA) 2016. [50% Acceptance Rate] ★ Distinguished Long Talk

P2. Voyager: Exploratory Analysis via Faceted Browsing of Visualization Recommendations
Kanit Wongsuphasawat, Dominik Moritz, Anushka Anand, Jock Mackinlay, Bill Howe, Jeffrey Heer.
IEEE Trans. Visualization & Computer Graphics (InfoVis) 2015. [22% Acceptance Rate] ★ 1 of 4 Top TVCG papers invited to SIGGRAPH'16

P1. Declarative Interaction Design for Data Visualization.
Arvind Satyanarayan, Kanit Wongsuphasawat, Jeffrey Heer. ACM User Interface Software and Technology 2014. [22% Acceptance Rate]

EXTENDED ABSTRACTS & TECHNICAL REPORTS

T3. Visualizing Attention in Sequence-to-Sequence Summarization Models.
Halden Lin, Kanit Wongsuphasawat, Tongshuang Wu, Yejin Choi, Jeffrey Heer. IEEE Trans. Visualization & Computer Graphics (VAST) 2018

T2. You Can't Force Calm: Designing and Evaluating Respiratory Regulating Interfaces for Calming Technology.
Kanit Wongsuphasawat, Alex Gamburg, Neema Moraveji. ACM User Interface Software and Technology (UIST) 2012.

T1. Plasma-Z: Team Description for Robocup: Small Size League.
Chitchanok Chuengsatiansup, Thiraphat Charoensriphngsa, Kanit Wongsuphasawat, Komsit Rattana, Pawawat Duongsodsri, Aphilux Buathong, Kittipat Wejwittayaklung, Manop Wongsaisuwan, Wittaya Wannasuphoprasit. International Robocup 2009 ★3rd Place

PATENTS

P1. Systems and Methods for Ranking Data Visualizations.
Anushka Anand, Jock Mackinlay, Kanit Wongsuphasawat. US Patent 9,613,102 (2017)

HONORS & AWARDS

IEEE TVCG VAST Best Paper Award (TensorFlow Graph Visualizer)	2017
ACM SIGCHI Best Paper Honorable Mention (GraphScape)	2017
IEEE TVCG InfoVis Best Paper Award (Vega-Lite)	2016
Invited to SIGGRAPH as 1 of 4 Top TVCG Paper (Voyager)	2016
Fulbright Fellowship (for studies at Stanford)	2011-2013
Valedictorian Gold Medal Award – Chulalongkorn Faculty of Engineering	2010
His Majesty the King Bhumibol Undergraduate Scholarship – Chulalongkorn Faculty of Engineering	2010
Winner of Thailand National Software Contest (University Level)	2010
3rd Place of Small-size League Soccer Robot at the International Robocup	2009
HRH the Royal Crown Prince of Thailand Top Engineering Student Medal	2009
Chulalongkorn University President Awards for Outstanding Students	2007, 2008, 2009
Runner-Up – Thailand ICT Award (University Level)	2008
3rd Place High Performance Award –Accenture Thailand Academic Exhibition	2008
Honorable Mention – ACM ICPC Regional Contest	2008
Winner – SAMART Innovation Award (A premier mobile software contest in Thailand)	2007
Bronze Medalist – Thailand Olympiad in Informatics	2004

INVITED TALKS

Augmenting Visualization Tools with Automated Design & Recommendation
MIT Human-Computer Interaction Seminar, Cambridge, MA — Nov 2018
Uber Visualization Nights, San Francisco, CA — Apr 2018
Databricks, San Francisco, CA — Mar 2018
Apple (Turi / Machine Learning Group), Seattle, WA — Mar 2018
Google (People+AI Research Initiative), Cambridge, MA — Mar 2018
Microsoft (PowerBI Team), Seattle, WA — Mar 2018
Microsoft Research, Seattle, WA — Mar 2018
https://www.microsoft.com/en-us/research/video/augmenting-visualization-tools-with-automated-design-recommendation/

Tableau Software, Seattle, WA — Feb 2018

Visualizing Dataflow Graphs of Deep Learning Models in TensorFlow
IEEE VAST 2017, Phoenix, AZ — Oct 2017

Voyager 2: Augmenting Visual Analysis with Partial View Specifications
ACM SIGCHI (Human Factor in Computer Systems), Denver, CO — May 2017

Vega-Lite: A Grammar of Interactive Graphics
Electrochemical Society Hackweek, Seattle, WA — May 2018
Microsoft Research, Seattle, WA — Nov 2017
Apple Inc., Seattle, WA — Aug 2017
OpenVisConf, Boston, MA — Apr 2017

Vega-Lite: A Declarative Format for Data Visualization
PlotCon, New York City, NY — Nov 2016

Towards A General-Purpose Query Language for Visualization Recommendation
HILDA at ACM SIGMOD (Workshop on Human-In-The-Loop Data Analytics) — June 2016

Vega-Lite Tutorials
UC Davis (Teleconference) — May 2016

Voyager: Exploratory Analysis via Faceted Browsing of Visualization Recommendations
SIGGRAPH 2016, Anaheim, CA — Jul 2016
Tableau Software, Seattle, WA — Jan 2016
IEEE InfoVis 2015 — Nov 2015

Visualization Tools & Visualization Recommender Systems
MFEC Corporation, Bangkok, Thailand — Dec 2016
Chulalongkorn University, Bangkok, Thailand — Dec 2016

Brief Introduction to Human-Computer Interaction
Chulalongkorn University, Bangkok, Thailand — Jun 2014

MENTORING

Vega-Lite

Ayush Saraf *BS Computer Science & Engineering'18* — 2015-2016
Youying Lin *BS Computer Science & Engineering'16* (Now software engineer at Google) — 2015-2016
Yuhan "Zoe" Lu *BS Computer Science &* Engineering'17 (Now software engineer at Facebook) — 2015-2017
Will Strimling *BS Computer Science & Engineering'18* (Joined Twitter Associate Product Manager) — 2015-2018
Chanwut (Mick) Kittivorawong *BS Computer Science & Engineering'20* — 2017-2018
Sira Horradarn *BS Computer Science & Engineering'18* (Now software engineer at Apple) — 2017-2018
Swojit Mohapatra *BS Computer Science & Engineering'18* — 2017-2018
Souvik Sen *Google Summer of Code'18* — 2018

Voyager/CompassQL

Riley Chang *BS Computer Science & Engineering '18* — 2016
Zening Qu *MS Human-Centered Design & Engineering '16* (Now PhD Student at UW) — 2016
Felix Ouk *BS Informatics'18* (Now software engineer at AirBnB) — 2016-2018
Halden Lin *BS Computer Science & Engineering'19* — 2017-2018
Shaheen Sharifian *BS Informatics'18* (Now software Engineer at Amazon) — 2017-2018

Alan Banh *BS Informatics'18* (Now software engineer at Microsoft) 2017-2018
FIon Chan *BS Informatics'18* 2017-2018

Vega-Lite & Voyager/CompassQL

Matthew Chun *BS Computer Science & Engineering'18* 2016-2018
Akshat Shrivastava *BS Computer Science & Engineering'18* 2017-2018
Lingyue (Cynthia) Zhang *BS Computer Science & Engineering'18* 2017-2018

SELECTED COVERAGE

Vega-Lite & Altair

Data visualization tools drive interactivity and reproducibility in online publishing *Nature*	Jan 2018
Visualizations Reach a New Height (Literally) *Qlik Branch*	Jul 2017
PyCon 2017 Keynote: The Python Visualization Landscape (by Jake VanderPlas)	May 2017
Trends in Data Visualization *LabManager*	May 2017
OpenVisConf 2017 Keynote (by Mike Bostock)	Apr 2017
A High-level Language for Interactive Data Visualization *IEEE Computer Society*	Apr 2017
Five Python libraries that make data visualisation easy *OpenSourceForU*	Mar 2017
A Snapshot of Current Trends in Visualization 2017 *IEEE Computing Now*	Feb 2017
Highlights from IEEE VIS'16 with Jessica Hullman and Robert Kosara *Data Stories Podcast*	Nov 2016
An Overview of Great Tools for Data Science *Signal-to-noise.xyz*	Nov 2016
Best of The Visualization Web *Visualizing Data*	Oct 2016
11 (Papers + Talks) Highlights from IEEE VIS'16 *Fell in Love With Data*	Oct 2016
A Dramatic Tour through Python's Data Visualization Landscape *Regress to Impress*	Oct 2016
Introduction to Data Visualization with Altair *Practical Business Python*	Aug 2016
Vega-Lite for Quick Online Charts *Flowing Data*	Feb 2016

Voyager

Enabling data science for the majority *O'Reilly Idea*	Oct 2017
IEEE VIS'15 Recap with Robert Kosara and Johanna Fulda *Data Stories Podcast*	Nov 2015
Two Highlights of IEEE's 2015 VisWeek Conference *Perceptual Edge's Visual Business Intelligence*	Nov 2015
Voyager wants to help journalists find and illustrate data stories *Journalism.co.uk*	Aug 2015
Higher-Level Tools for Interactive Data Visualization *Intel Science & Technology Center for Big Data Blog*	Jun 2015

TensorFlow/TensorBoard Graph Visualizer

A Snapshot of Current Trends in Visualization 2018 *IEEE Computing Now*	Feb 2018
Review of IEEE VIS'17 with Jessica Hullman and Robert Kosara *Data Stories Podcast*	Nov 2017
Visualizing Dataflow Graphs of Deep Learning Models in TensorFlow *Hacker News (Front Page)*	Oct 2017
Visualizing your model using TensorBoard *Toward Data Science*	Sep 2017
Visualizing convolutional neural networks *O'Reilly Idea*	Sep 2017
Introduction to TensorFlow *Hack a Day*	Apr 2017
The Good, Bad, & Ugly of TensorFlow *Indico*	May 2016

TEACHING

University of Washington

Course Assistant: CSE442 Data Visualization (for undergraduate students) 2017
Course Assistant: CSE512 Data Visualization (for PhD students) 2014
Mentored and graded student projects / developed D3 & web development workshops (https://github.com/uwdata/d3-tutorials)

Chulalongkorn University

Course Assistant: Entrepreneurship Course (Chulalongkorn Business School) 2010
Mentor and grade student projects.

Course Assistant: Discrete Mathematics (Computer Engineering Department) 2009
Develop problem sets and online tutorials

ACTIVITIES & SERVICES

Publication Reviewer – IEEE InfoVis 2014-18, IEEE VAST 2016-18, IEEE SciVis 2018, ACM SIGCHI 2014-19, ACM UIST 2016- 18,

Program Committee – ACM IUI 2019, VisxAI at IEEE VIS 2018

Student Volunteer – ACM UIST 2012

Visualizatoin Illustrator – "Making Data Visual", a book by Danyel Fisher and Miriah Meyer

Admission Committee – UW CSE PhD Student Admission 2015

Seminar Organizer – Interactive Systems Seminar 2014

Club President – Chulalongkorn IEEE Computer Student Society 2008-2009

Author – Solution guide for problem sets in Chulalongkorn Calculus I & II Text Book

Designer – UW Interactive Data Lab logo, business cards, poster themes

Member – Association for Computing Machinery (ACM, 2012-2018), UW Interactive Data Lab (2013-2018), UW Design-Use-Build group (2013-2018), Business Association of Stanford Entrepreneurial Students (BASES, 2011-2013), Stanford Design Initiative (2012-2013), Thai Young Philanthropists Network (2010), Capitol Toastmasters Club of Toastmaster International (2010), Chulalongkorn Business Plan Club (2010), Chulalongkorn Engineering Innovator's Club (2009-2011), Chulalongkorn Photographer's club (2009-2011)

RESEARCH INTERESTS

Human-Computer Interaction, User Interface Systems, Data Visualization, and Data Science.

My PhD research focuses on augmenting visualization tools with automated design and recommendation to help users achieve their goals more effectively with less efforts, for applications including exploratory data analysis and understanding deep learning models. I look forward to studying and designing more tools that facilitate people, both experts and novices, to work with and benefit more from data via visualization and intelligent systems.