## Omar Shaikh (he/him/his) — Curriculum Vitae


**Contact Information**

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**Research Interests**

Human Computer Interaction, Computational Social Science, Natural Language Processing, Visualization

**Education**

**Georgia Institute of Technology**, Atlanta, GA USA

B.S. in Computer Science. Minor in Linguistics (expected graduation date: May 2022)

- GPA: 4.0/4.0
- Advisors: Polo Chau and Diyi Yang

**Academic Experience**

**Georgia Institute of Technology**, Atlanta, GA USA

*PoloClub and SALT Lab - Undergraduate Researcher* **Dec 2018 - Present**
*Advisors: Dr. Polo Chau, Dr. Diyi Yang*
Research at the intersection of Visualization, HCI, and NLP. Working on methods for explaining ML to end-users. Organizing board-game nights 🎉 🎲

**USC Information Sciences Institute**, Marina del Rey (remote), CA USA

*Natural Language Group - Research Intern* **May 2020 - Aug 2020**
*Advisor: Dr. Jonathan May*
Research on understanding and using monolingual embeddings for transfer learning in neural machine translation.

**Cornell University**, Ithaca, NY USA

*Virtual Embodiment Lab - Visiting Researcher* **Aug 2016 - May 2018**
*Advisor: Dr. Andrea Won*
Research on computational social science and VR. Worked on measuring + identifying pro-social cues from movement behaviour.

**Works in Progress**

*Submission on Understanding COVID-19's Impact on Small Businesses Moving Online.* **Omar Shaikh**, Cassandra Ung, Diyi Yang, Felipe Chacon. Currently under R&R at CSCW 2022.

**Conferences & Journals**

*NeuroCartography: Scalable Automatic Visual Summarization of Concepts in Deep Neural Networks.* Haekyu Park, Nilaksh Das, Rahul Duggal, Austin P. Wright, **Omar Shaikh**, Fred Hohman, Duen Horng (Polo) Chau. IEEE VIS 2021.
https://arxiv.org/abs/2108.12931

*RECAST: Enabling User Recourse and Interpretability of Toxicity Detection Models with Interactive Visualization.* Austin P Wright, **Omar Shaikh**, Haekyu Park, Will Epperson, Muhammed Ahmed, Stephane Pinel, Duen Horng (Polo) Chau, Diyi Yang. CSCW 2021.
https://arxiv.org/abs/2102.04427

*CNN Explainer: Learning Convolutional Neural Networks with Interactive Visualization.* Zijie J. Wang, Robert Turko, **Omar Shaikh**, Haekyu Park, Nilaksh Das, Fred Hohman, Minsuk Kahng, Duen Horng (Polo) Chau. TVCG 2021.
https://arxiv.org/abs/2004.15004
Went viral! Front page on Hacker News, 5K stars on Github. Here's a video by Two Minute Papers.

*Examining the Ordering of Rhetorical Strategies in Persuasive Requests.* **Omar Shaikh**, Jiaao Chen, Jon Saad-Falcon, Duen Horng (Polo) Chau, Diyi Yang. Findings of EMNLP 2020.
https://arxiv.org/abs/2010.04625

*Argo Lite: Open-Source Interactive Graph Exploration and Visualization in Browsers.* Siwei Li, Zhiyan Zhou, Anish Upadhayay, **Omar Shaikh**, Scott Freitas, Haekyu Park, Zijie J. Wang, Susanta Routray, Matthew Hull, Duen Horng (Polo) Chau. Resource Paper, CIKM 2020.
https://arxiv.org/abs/2008.11844

*Nonverbal Synchrony in Virtual Reality.* Yilu Sun, **Omar Shaikh**, Andrea Stevenson Won. PLoS ONE 2019.
https://doi.org/10.1371/journal.pone.0221803

*Personalized Avatars and Self-Presence.* Yilu Sun, Swati Pandita, **Omar Shaikh**, Byungdoo Kim, Andrea Stevenson Won. PRESENCE: International Society for Presence Research (ISPR), 2018.

## Abstracts & Posters

*EnergyVis: Interactively Tracking and Exploring Energy Consumption for ML Models.* **Omar Shaikh**, Jon Saad-Falcon, Austin P Wright, Nilaksh Das, Scott Freitas, Omar Asensio, Duen Horng Chau. Late-Breaking Work, CHI 2021.
https://arxiv.org/abs/2103.16435

*Mapping Researchers with PeopleMap.* Jon Saad-Falcon, **Omar Shaikh**, Zijie J. Wang, Austin P. Wright, Sasha Richardson, Duen Horng (Polo) Chau. Poster, IEEE VIS 2020.
https://arxiv.org/abs/2006.06105
Honorable Mention, Best Poster Award.

*RECAST: Interactive Auditing of Automatic Toxicity Detection Models.* Austin P Wright, **Omar Shaikh**, Haekyu Park, Will Epperson, Muhammed Ahmed, Stephane Pinel, Diyi Yang, Duen Horng (Polo) Chau. Chinese CHI 2020 Workshop.
https://arxiv.org/abs/2001.01819

*CNN 101: Interactive Visual Learning for Convolutional Neural Networks.* Zijie J. Wang, Robert Turko, **Omar Shaikh**, Haekyu Park, Nilaksh Das, Fred Hohman, Minsuk Kahng, Duen Horng (Polo) Chau. Late-Breaking Work, CHI 2020.
https://arxiv.org/abs/2001.02004

*Movement Tracker for Networked Virtual Reality Platforms.* **Omar Shaikh**, Yilu Sun, Andrea Stevenson Won (2018). Poster, IEEE VR 2018.
https://ieeexplore.ieee.org/abstract/document/8446398
Used by Cornell's Virtual Embodiemnt Lab and University of Georgia's GAVEL Lab.

## Press

"This New Tool Can Track the Environmental Cost of Your Machine Learning Model," Georgia Tech, College of Computing, April 2021
https://b.gatech.edu/2RvgO6k

"Making Change, Chapter 4: One Year of Payments and the Pandemic," Square Inc. March 2021
https://squareup.com/us/en/making-change/2021

"Being Polite Can Be Essential to Getting a Loan," Georgia Tech, College of Computing, Nov. 2020
https://b.gatech.edu/3u68FU5

"Axe throwing and hard seltzer: Here are 2020's hottest spending trends," [1] CBS News. Sep. 2019
https://cbsn.ws/3wadiy6

"20 Predictions for 2020," Square Inc. Sep. 2019
https://squareup.com/us/en/campaign/2020-predictions

## Honors and Awards

Sigma Xi Best Undergraduate Research Award, 2021

President's Undergraduate Research Award, Spring 2020, Fall 2021

Outstanding Freshman, College of Computing, for work during 2018-2019

Microsoft Imagine Cup National Winner (Saudi Arabia), Middle East and Africa Finalist, 2017

Square Intern Hackathon, 1st place, 2019

Faculty Honors, all semesters

## Professional Experience

**Square**, Atlanta, GA USA

*Research Intern* **Jan 2021 - Aug 2021**
*Advisor: Felipe Chacon*
Modeled seller digitization during the COVID-19 pandemic for millions of transactions over hundreds of thousands of sellers. Analyzed variations across region, policy, and business sector. Focused on understanding the rise of telehealth services following COVID-19. Under review at CSCW 2022.

*Applied ML Research Intern* **May 2019 - Aug 2019**
*Advisor: Dr. Marsal Gavalda*
Generated tax code + item dependency graphs from unstructured text data. Modified prior classifiers to use generated graphs. Analyzed n-gram frequencies using Spacy and NLTK for millions of transactions per day. Classified trends based on characteristics from a log-linear regression. Team presented to CEO (Jack Dorsey) + Core after garnering attention.

## Misc

- WREK Radio @ GT (2021 - Current)
  Helping run a radio shift! Find me on air Fridays from 3 PM to 4 PM EST, 91.1 FM Atlanta.
- CS 4650 - Natural Language Processing TA (Fall 2021)
  Held office hours, designed new HWs on bias & computational social science, graded assignments.
- Threads Mardi Gras (March 2019)
  Invited to advise new undergrads about various specializations *(threads)* in GATech's College of Computing.
- Serve Learn Sustain @ GT (2018 - Current)
  Promoting equitable access to sustainable resources at Georgia Tech, through volunteering and workshops.

## Skills

Languages: Python, Java, C, JavaScript, C#, English, Arabic, Hindi
Frameworks: PyTorch, scikit-learn, Node.js, React (Native), Redux, Unity

## Personal

I once had to sail a sunfish without my glasses. I can barely sail. I also can't see (much less do) anything without my glasses. Also: ask me where I'm from!

[1] Probably not very accurate thanks to COVID :)