

Alexander E. Bendeck

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Education

Georgia Institute of Technology (Georgia Tech), Atlanta, GA **Fall 2021 – Present**

Ph.D. in Computer Science

- Advisor: Prof. John Stasko
- GPA: 4.0/4.0
- Courses: Data Visualization, Human-Computer Interaction, Data & Visual Analytics

Duke University, Durham, NC **Fall 2017 – Spring 2021**

B.S. in Computer Science and Statistical Science, *Summa Cum Laude*

- GPA: 4.0/4.0
- Courses: Machine Learning, Data Mining, Statistical Computing, Database Systems

Research Interests

Visual data analysis, text-mediated human-data interaction, maps & geographic data

Research Experience

Georgia Tech Visualization Lab, Graduate research assistant **Spring 2022 – Present**

Advised by Prof. John Stasko

- Studying how to integrate text (e.g., large language models) with data visualizations to scaffold and enhance the process of interactive visual data analysis
- Building geographic visualizations to help domain experts view migration flows in the U.S.
- Helping collaborators design experimental stimuli to represent electric grids

Chu Data Lab, Graduate research assistant **Fall 2021**

Advised by Prof. Xu Chu

- Developed and implemented algorithms for a weakly supervised entity matching system

Duke Database Research Group, Research assistant **Fall 2019 – Fall 2020**

Advised by Prof. Jun Yang and Prof. Sudeepa Roy

- Created and revised interface designs for an interactive SQL debugger; reviewed literature to investigate the scope of similar prior work and inform design decisions
- 2020 CS+ Summer Research Program: Implemented front-end designs (HTML, JavaScript) and query parsing algorithms (Java); designed a plan to test debugger's efficacy in Fall 2020

Duke Motivated Cognition & Aging Brain Lab, Research assistant **Summer 2018 – Spring 2021**

Advised by Prof. Gregory Samanez-Larkin

- Conducted statistical analyses to investigate the effects of text message-based health interventions on physical activity
- Wrote Python code to collect and analyze participant data for neuroscience studies

Publications

Robin: An Interactive Visual Data Explorer for Domestic Migration in the United States.

- [Alexander Bendeck](#), Clio Andris, and John Stasko. Submitted to *IEEE Transactions on Visualization and Computer Graphics*, 2024.

SlopeSeeker: A Search Tool for Exploring a Dataset of Quantifiable Trends.

- [Alexander Bendeck](#), Dennis Bromley, and Vidya Setlur. Accepted to *ACM Conference on Intelligent User Interfaces (IUI)*, 2024.

Ground Truth Inference for Weakly Supervised Entity Matching.

- Renzhi Wu, [Alexander Bendeck](#), Xu Chu, and Yeye He. *ACM SIGMOD International Conference on Management of Data*, 2023.

Text Mining and Spatial Analysis of Yelp Data to Support Socially Vibrant Cities.

- [Alexander Bendeck](#) and Clio Andris. *11th International Workshop on Urban Computing*, 2022.

I-Rex: An Interactive Relational Query Explainer for SQL.

- Zhengjie Miao, Tiangang Chen, [Alexander Bendeck](#), Kevin Day, Sudeepa Roy, and Jun Yang. *Proceedings of the VLDB Endowment (PVLDB)*, Vol 13, Demonstration Track, 2020.

Teaching Experience

Georgia Tech CS 6730 (Data Visualization Principles), Teaching assistant (TA) **Fall 2023**

- Graded assignments and held regular office hours

Duke COMPSCI 230 (Discrete Math), Undergraduate TA **Fall 2020**

- Graded assignments and held regular office hours

Duke COMPSCI 101 (Intro to CS)

Head undergraduate TA

Spring 2019 – Fall 2019

- Revised course assignments and improved assignment auto-grading system based on student feedback; oversaw grading of assignments by other TAs
- Co-programmed and deployed a web app for exam prep used by over 120 students

Undergraduate TA

Fall 2018

- Graded assignments and held regular office hours

Duke Mathematics Department, Office hours staff member

Spring 2018

- Tutored Duke students enrolled in MATH 212 (Multivariable Calculus)

Honors & Awards

Georgia Tech Goizueta Foundation Fellow

Fall 2023

- Received a 2-year financial award for exceptional Georgia Tech Ph.D. students of Hispanic/Latino origin

Georgia Tech President's Fellow

Fall 2021

- Received a 4-year financial award for highly qualified Georgia Tech Ph.D. applicants in the top 10% of their application pool

Phi Beta Kappa Honor Society inductee

Spring 2021

- Selected based on record of high academic achievement

Duke University Dean's List with Distinction

Fall '17, '18, '19; Spring '18, '19

- Awarded in every eligible semester for placement in the top 10% of Arts & Sciences undergraduates by GPA

Duke Undergraduate Research Support Small Grant recipient

2018-19 Academic Year

- Received funding for an fMRI scan as a pilot tester for a neuroscience research study

Florida Engineering Society Scholarship recipient

Spring 2017

- Received a \$1000 merit scholarship based on high school record and STEM interest

2017 National Merit Scholarship Finalist

Spring 2017

- Named as a finalist for the 2017 National Merit Scholarship

Professional Experience

Tableau Research, Research intern **Summer 2023**

Mentored by Dennis Bromley and Vidya Setlur

- Developed novel algorithms for semantic labeling and search of trends in line charts, as well as a prototype system to demonstrate the approach's efficacy

Activities & Mentoring

Georgia Tech Latino Organization of Graduate Students

Internal Outreach Committee chair

Fall 2023 - Present

- Organizing graduate student mentorship program, faculty panels, and networking opportunities for new and prospective graduate students

Member

Fall 2021 - Present

- Helping to facilitate mentorship and networking events for graduate students

GVU Brown Bag Talks, Student organizer

Spring 2023

- Coordinated graduate student "lightning talks" for the GVU Brown Bag seminar series

Duke Statistical Science Majors Union, Member and student mentor

Fall 2020 - Spring 2021

- Mentored two first-year students interested in data science for the 2020-21 school year

Duke Mi Gente Cultural Organization, Member and student mentor

Fall 2019 - Spring 2021

- Mentored one first-year student in the "Mi Familia" program for the 2020-21 school year
- Mentored three first-year students in the "Mi Familia" program for the 2019-20 school year

Service

- **Reviewer:** IEEE VIS Conference (2023), EuroVis Conference (2024)

Skills

- **Programming:** Python (NumPy, sklearn, Pandas, PyTorch), R (dplyr, rshiny, plotly, leaflet), JavaScript (D3.js), HTML/CSS, MATLAB, SQL
- **Productivity:** Git, GitHub, Zoom, Slack, Microsoft Teams, LaTeX
- **Languages:** English (native language), Spanish (elementary proficiency)