

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. Xu Chu

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

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

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

Research Interests

Databases, data management, machine learning, interactive data analytics

Research Experience

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

Advised by Prof. Xu Chu

- Build systems to tackle common data management and data quality problems that arise when implementing machine learning models

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 inform design decisions, investigate similar prior work, and identify theoretical challenges
- 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

Information Initiative at Duke: Data+ Program, Data science researcher **Summer 2019**

Advised by Prof. Alex Volfovsky and PhD student Harsh Parikh

- Extracted basketball player motion data from freely-available footage using a neural network and trained machine learning models to group the detected players onto teams

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

Advised by Prof. Gregory Samanez-Larkin

- Conducted statistical analyses to investigate the effects of health-focused messaging on physical activity
- Wrote Python code to collect and analyze participant data for neuroscience studies
- Received Duke Undergraduate Research Support Grant for the 2018-19 Academic Year

Publications

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

Duke COMPSCI 230 (Discrete Math), Teaching assistant (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
- Duke COMPSCI 101 (Intro to CS), Teaching assistant** **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 President’s Fellow** **Fall 2021**
- Received a 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

Activities

- 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
- Duke Undergraduate Machine Learning, Member** **Spring 2019 – Spring 2021**
- Attended talks and hands-on workshops for Machine Learning and Data Science
- Duke Society of Hispanic Professional Engineers, Member** **Fall 2017 – Spring 2021**
- Attended professional development events held by company sponsors

Skills

- Programming:** Python (NumPy, sklearn, Pandas), R, MATLAB, SQL, Java, JavaScript, HTML
- Productivity:** Git, GitHub, Zoom, Slack, Microsoft Teams
- Languages:** English (native language), Spanish (elementary proficiency)