Ángel Alex ander Cabrera

I am a first year PhD student in the Human Computer Interaction Institute (HCII) at Carnegie Mellon University.

My research focus is broadly **human-centered AI**, specifically in applying techniques from **HCI** and **visualization** to help people better understand and develop machine learning models. I am supported by a NSF Graduate Research Fellowship.

Before CMU, I graduated with a B.S. in Computer Science from Georgia Tech, where I was a member of the Polo Club of Data Science and worked with Polo Chau and Jamie Morgenstern. I also spent a few summers as a software engineering intern at Google working on Google Maps, Cloud Dataflow, and Android Auto.



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GitHub



屖 Google Scholar

Education

August 2019

PhD in Human-Computer Interaction (HCI)

- Present

Carnegie Mellon University - Pittsburgh, PA

August 2015

B.S. in Computer Science

- May 2019

Georgia Institute of Technology - Atlanta, GA

Concentration in intelligence and modeling/simulation. Minor in economics.

Overall GPA: 3.97/4.0

Fall 2017

Sciences Po - Paris, France

Exchange program with a focus on economics and political science.

Awards

May 2019

National Science Foundation Graduate Research Fellowship (NSF GRFP)

Three-year graduate fellowship for independent research. Full tuition with an annual stipend of \$34,000.



May 2019 Love Family Foundation Scholarship

Award for the undergraduate with the most outstanding scholastic record in the graduating class. Co-awarded the \$10,000 scholarship.



August 2015 Stamps President's Scholar

- May 2019 Georgia Tech and the Stamps Family Charitable Foundation

Full ride scholarship with \$15,000 in extracurricular funding awarded to 10 students (27,270 applicants).



February 3, 2018 The Data Open Datathon

Correlation One and Citadel Securities

Placed third and won \$2,500 for creating a supervised learning system that predicts dangerous road areas.



Industry Experience

May 2018 Google

- August 2018 Software Engineering Intern

Researched and prototyped improvements for automated driver assistance systems and hyperlocal weather prediction for the next generation of Android Auto.



May 2017 Google

- August 2017 Software Engineering Intern

Designed and implemented an anomaly detection and trend analysis system for Google's primary data processing pipelines.



May 2016 Google

- August 2016 Engineering Practicum Intern

Built an analytics platform for monitoring and catching erroneous edits to Google Maps.



Research Experience

January 2018 Polo Club of Data Science

- Present Undergraduate Researcher

Applying human computer interaction and visualization techniques to help people understand and design more equitable machine learning models.



September 2015

PROX-1 Satellite

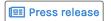
- May 2017

Flight Software Lead and Researcher

Led a team of engineers in developing and deploying the software for a fully undergraduate-led satellite mission.









Publications

2019 FairVis: Visual Analytics for Discovering Intersectional Bias in Machine Learning

Ángel Alexander Cabrera, Will Epperson, Fred Hohman, Minsuk Kahng, Jamie Morgenstern, Duen Horng (Polo) Chau

IEEE Transactions on Visualization and Computer Graphics. Vancouver, Canada, 2019.



2019 Discovery of Intersectional Bias in Machine Learning Using Automatic Subgroup Generation

Ángel Alexander Cabrera, Minsuk Kahng, Fred Hohman, Jamie Morgenstern, Duen Horng (Polo) Chau

Debugging Machine Learning Models Workshop at ICLR (Debug ML). New Orleans, Louisiana, USA, 2019.



2018 Interactive Classification for Deep Learning Interpretation

Ángel Alexander Cabrera, Fred Hohman, Jason Lin, Duen Horng (Polo) Chau Demo at IEEE Computer Vision and Pattern Recognition (CVPR). Salt Lake City, Utah, USA, 2018.



Projects

Fall 2018 ICLR'19 Reproducibility Challenge

*Generative Adversarial Models For Learning Private And Fair Representations*Implemented the architecture and reproduced results for an ICLR'19 submission using GANs to decorrelate sensitive data.



Spring 2018 Georgia Tech Bus System Analysis

System that combines Google Maps and graph algorithms to include Georgia Tech bus routes in navigation.





Spring 2014 CTF Resources

Introductory guide and resources for capture the flag (CTF) competitions with over 800 stars on GitHub.





Teaching

Fall 2016, Spring 2017, Spring 2018

Undergraduate Teaching Assistant

CS1332 - Data Structures and Algorithms

Taught a 1 1/2 hour weekly recitation, graded tests and homework, and helped create assignments.

Fall 2016

Team Leader

GT 1000 - First-Year Seminar

Designed a class curriculum for incoming first years and helped lead a weekly seminar class.

Service

Student Volunteer

October 2019 IEEE Visualization Conference (VIS) 2019

January 2019 Fairness, Accountability, and Transparency (FAT*) 2019

Campus Involvement

September 2015

Stamps Scholars National Convention 2017

- April 2017

Vice-chair of large events

Directed a 13 person committee in organizing hotels, meals, and presentations for over 700 students.



Spring 2016

Tour Guide

Led a tour of campus for visiting families every week.



September 2015

Georgia Tech Student Foundation

- May 2016

Investments committee and Freshman Leadership Initiative

Conducted market research to help manage a \$1.2 million endowment and organized fundraising events.



Selected Classes

| Fall 2018 | CS 4803/7643 - Deep Learning |
|-------------|--|
| Spring 2018 | CX 4242/CSE 6242 - Data and Visual Analytics |
| Fall 2017 | BECO 1750A - Money and Banking |
| Spring 2017 | CS 4641/7641 - Machine Learning |
| Spring 2017 | CX 4230 - Computer Simulation |
| Spring 2017 | CS 3511 - Honors Algorithms |

Skills

Languages

English - Native | Spanish - Native | French - Conversational (B1)

Programming Languages

 Java
 Javascript
 Python
 C/C++
 SQL
 Go

Technologies



Last updated September 3, 2019.