

Education

Georgia Institute of Technology

 Ph.D. in Machine Learning

Summer 2023 - present

► Advisor: Dr. Polo Chau

 M.S. in Computer Science

2015 - 2018

► GPA: 3.91/4.0

Samford University

2000 - 2004

 B.M. in Piano Performance

Positions

FedEx Express / Pilot - Captain

August 2016 - Present

- Act as Pilot In Command in FAR 121 air carrier operations on Boeing 757/767 aircraft with flights operating in the U.S., Europe, and Asia.

ExpressJet Airlines / Manager - Advanced Qualification Program

January 2014 - August 2016

- Implemented and maintained the Flight Crewmember Advanced Qualification Program. Led pilot proficiency data collection and analysis projects. Coordinated Federal Aviation Administration program approvals and AQP manual revisions.

ExpressJet Airlines / Lead Ground and Simulator Instructor

May 2007 - December 2013

- Coordinate training and standardization of Ground Instructors on the EMB-135/145 Aircraft. Develop courseware for classroom learning, content for computer-based-training, and lesson plans for cockpit procedures training.

ExpressJet Airlines / Pilot - Captain

May 2006 - August 2016

- Act as Pilot In Command in FAR 121 air carrier operations on Embraer 135/145 aircraft for Continental Express and United Express

Academic Research Experience

Instructional Associate Researcher - Polo Club of Data Science

May 2021 - Present

DARPA Guaranteeing AI Robustness Against Deception (GARD) project

Honors and Awards

🌟 Google Award for Inclusion Research Program

2023

For scaling up educators' capacities by automating visualization assessment via generative AI

🌟 Outstanding Instructional Associate

2022

For teaching assistantship in CSE 6242 - Data and Visual Analytics at Georgia Tech

🌟 Best Poster Award at IEEE VIS Conference

2021

For "Towards Automatic Grading of D3.js Visualizations"

Publications

Revamp: Automated Simulations of Adversarial Attacks on Arbitrary Objects in Realistic Scenes

M.Hull, Z.J. Wang, D.H. Chau

Proceedings of the 12th International Conference on Learning Representations (ICLR), 2024.

LLM Self Defense: By Self Examination, LLMs Know They Are Being Tricked

M. Phute, A. Helbling, M.Hull, S. Peng, S. Szyller, C. Cornelius, D.H. Chau

Proceedings of the 12th International Conference on Learning Representations (ICLR), 2024.

Robust Principles: Architectural Design Principles for Adversarially Robust CNNs

S. Peng, W. Xu, C. Cornelius, M.Hull, K. Lee, R. Duggal, M. Phute, J. Martin, D.H. Chau

Proceedings of the 34th British Machine Vision Conference (BMVC), 2023.

VisGrader: Automatic Grading of D3 Visualizations

M. Hull, V. Pednekar, H. Murray, N. Roy, E. Tung, S. Routray, C. Guerin,

J. Chen, Z.J. Wang, S. Lee, M. Roozbahani, D.H. Chau

IEEE Transactions on Visualization and Computer Graphics (IEEE VIS), 2023.

DetectorDetective: Investigating the Effects of Adversarial Examples on Object Detectors

S. Vellaichamy, M. Hull, Z.J. Wang, N. Das, S. Peng, H. Park, D.H. Chau

Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2022.

Towards Automatic Grading of D3.js Visualizations

M. Hull, C. Guerin, J. Chen, S. Routray, D. H. Chau

IEEE Transactions on Visualization and Computer Graphics (IEEE VIS), 2020.

🏆 Best Poster Award

Argo Lite: Open-Source Interactive Graph Exploration and Visualization in Browsers

S. Li, Z. Zhou, A. Upadhayay, O. Shaikh, S. Freitas, H. Park, Z. J. Wang, S. Routray, M. Hull, D. H. Chau

Proceedings of the ACM International Conference on Information & Knowledge Management (CIKM), 2020.

Invited Talks and Presentations

Flying Cargo During the COVID-19 Pandemic

► Palo Alto University Rotary Club, Palo Alto, CA (Invited Talk, Host: Jake Yoo)

September 23, 2022

Line Oriented Evaluation Design

► Advanced Qualification Program Working Group, Las Vegas, NV, USA (Invited Talk, Host: Allegiant Airlines) October 15, 2015

Tactical Reporting of Advanced Qualification Program Training Data

► World Airline Training Symposium Orlando, FL, USA (Invited Talk, Host: Julie Franzen)

April 20, 2015

Reason Code & Instructor Comments Data Analysis Methodology

► Advanced Qualification Program Working Group Dallas, TX, USA (Invited Talk, Host: Envoy Airlines)

February 25, 2015

Professional Service

Reviewer

► ACM International Conference on Information & Knowledge Management, Resource Track (CIKM)

2020

Teaching

CSE 6242: Data & Visual Analytics

Georgia Institute of Technology

• Head Teaching Assistant / Instructional Associate (1200 students)

Fall 2019 - Present

• Teaching Assistant / Instructional Associate (900 students)

Fall 2018 - Spring 2019

• Graduate Teaching Assistant (800 students)

Spring 2018 - Summer 2018

Flight Standards & Training

- Simulator Instructor - Embraer 145 Aircraft
- Lead Ground Instructor - Embraer 145 Aircraft
- Ground Instructor - Embraer 145 Aircraft

ExpressJet Airlines

January 2016 - August 2016

January 2012 - December 2013

July 2007 - December 2012

Certifications

- Boeing 757 / 767 Type Rating
- Boeing 737 Type Rating
- Embraer 135/145 Type Rating
- Airline Transport Pilot
- Certified Flight Instructor - Single Engine, Multi Engine, Instrument
- Remote Pilot - Small Unmanned Aircraft Systems

Skills

Programming

Python, R, JavaScript, SQL, Objective-C

Web Development

D3, jQuery, Ruby on Rails, PHP

Design

Blender, Cinema4D, After Effects, Photoshop, Affinity Designer

References

Dr. Polo Chau, Professor

School of Computational Science and Engineering

Georgia Institute of Technology

cc.gatech.edu/~dchau/

Dr. Mahdi Roozbahani, Lecturer

School of Computational Science and Engineering

Georgia Institute of Technology

cse.gatech.edu/people/mahdi-roozbahani/

James Barbour, Director - Flight Standards and Training

Avelo Airlines

JBarbour@aveloair.com