

CAITLYN CAGGIA

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EDUCATION

Georgia Institute of Technology, Atlanta, Georgia

M.S. in Electrical and Computer Engineering, Concentration in Electromagnetics

Class of 2019

B.S. in Electrical Engineering, BS/MS Accelerated Program, Highest Honors

Class of 2018

SKILLS

Programming Languages: MATLAB, Python, C/C++, SQL, DAX, VHDL | Windows, macOS, Linux (Ubuntu, CLI)
Cloud Platforms: Databricks (Delta Lake, MLflow), Azure (Synapse, Data Lake), AWS (cloud practitioner)
Modeling Software: PowerBI, Tableau, Alteryx, Cameo, Rhapsody, ModelCenter, Solidworks, AFSIM, AutoCAD
Collaboration Tools: Rally, Jira, Git, Cameo Teamwork Cloud, Phoenix Integration Analysis Server
Certificates: Model Based Systems Engineering (California Institute of Technology, March 2020)

WORK EXPERIENCE

Peraton

January 2021 – present

Pandemic Response Accountability Committee (PRAC), Atlanta, Georgia

June 2022 – present

Lead Data Engineer, Pandemic Center of Excellence (PACE) Program

- Develop, optimize, and maintain data pipelines to detect fraud in the \$5T COVID-19 pandemic relief funding
- Modernize data architecture to use Databricks Delta Lake and Python scripts for >15x runtime improvement
- Automate quality control checks to reduce error rate to <1% and manual review time from days to minutes
- Liaison between infrastructure, investigative, and data science teams to balance business and technical needs

Global Health and Financial Solutions Sector, Atlanta, Georgia

January 2021 – May 2022

Principal Solutions Architect, Campaigns and Solutions

- Drove new civil and health sector growth as a solutions architect focusing on CMS projects and programs
- Architected technical solutions for cloud-based AI/analytics capture and proposals totaling over \$1B in TPV
- Managed 6 engineers to prioritize tasking, provide mentorship, and guide career development

Lead Databricks Developer, High Volume Transaction Processing Internal Research and Development

- Wrote Python scripts to process data ingest, cleaning, and processing for use in ML algorithms and visualizations
- Initiated analysis of alternatives, vendor partnerships, MVP production environment, and prototyping
- Served as scrum master for team of 5 software engineers to support Agile software development methodologies

Northrop Grumman Corporation

May 2017 – January 2021

Civil and Health Business Unit, Defense Systems, Atlanta, Georgia

June 2020 – January 2021

Solutions Architect, Future Technical Leaders rotational program

- Presented analytics solutions and AI capabilities to customers in 2+ live demonstrations and rare oral RFIs
- Co-authored white papers on cyber analytics, event-based architecture, and fraud, waste, and abuse strategy
- Developed technical solutions for civil and health customers, including the DOJ, TSA, CDC, and JOMIS

Data Analyst, Defense Systems Sector financial reporting

- Automated sector-level financial forecasting dashboards using Python, Alteryx, and Power BI as lead developer
- Expanded analytics capabilities from SAP/spreadsheet-centric tracking to include what-if predictions
- Led team of 4 developers by translating business objectives to assign and prioritize technical tasks

H-1 Lead Technology Integrator, Mission Systems, San Diego, California

July 2019 – June 2020

Model Based Systems Engineer (MBSE), Future Technical Leaders rotational program

- Led behavior modeling efforts on navigation, communications, and electronic warfare systems in H-1 helicopters
- Created and updated 50+ diagrams, drawings, and models in Cameo for the Link-16 Rapid Integration design
- Designed an audio/video cable and an RF cable using SolidWorks that will be flown on all 350+ upgraded aircraft
- Earned formal customer recognition for leadership in authoring 4+ MBSE style guides for Agile hardware design

Communications Systems, Mission Systems, San Diego, California
Systems Engineering Intern

May 2018 – July 2019

- Simulated, analyzed, and validated scenarios and environments for multifunction RF systems in MATLAB
- Conducted trade studies for radios and waveforms using automated data collection and genetic algorithms
- Established consistent modeling practices between independent radar and communications modeling teams

Model Based Capability Engineering, Mission Systems, Baltimore, Maryland
Systems Engineering Intern

May 2017 – May 2018

- Generated 20+ analytical and descriptive radar models in MATLAB, Python, Rhapsody, and ModelCenter
- Evaluated timing and kinematics fidelity for mission-level analysis in AFSIM, a C++ simulation framework

Cisco Systems

May 2016 – August 2016

Project Management and IT Analyst Intern, Cisco Commerce, San Jose, California

- Enabled purchases worth 25% of Cisco's annual \$50 billion revenue by updating ecommerce portal
- Managed 5 interns to become one of 10 project teams to present to top executives at Cisco's IT Intern Showcase

IBM

May 2015 – August 2015

Operations Team Intern, Systems Middleware, Raleigh, North Carolina

- Created executive summaries on technical projects for the VP of DevOps Capability Development
- Directed meetings and tracked follow up for 52 internal projects and customer relationships

RESEARCH AND PERSONAL PROJECTS

Technical Consultant, Atlanta, Georgia

July 2020 – present

Freelancer

- Consult as researcher and content writer for automation, AI/ML, analytics, cybersecurity, and cloud technology
- Bolster clients' SEO and digital presence with articles that bring emerging technologies to a conversational level
- View samples of my work in my portfolio at <https://caitlyncaggia.com/portfolio/>

Space Systems Design Lab, Georgia Institute of Technology, Atlanta, Georgia

October 2017 – May 2018

RECONnaissance of Space Objects (RECONSO), Daniel Guggenheim School of Aerospace Engineering

- Designed a cubesat to characterize and track space debris from 1 - 10 cm in diameter in low-earth orbit
- Rebuilt the flight software state machine to downlink images from the satellite to the ground station

InVenture Prize Semifinalist, Atlanta, Georgia

December 2017 – February 2018

Defect Detect

- Developed a millimeter wave scanner to detect and measure defects in airplane fuselages and turbines
- Recognized as a top 25 semifinalist in the largest undergraduate invention competition in the United States

IEEE Signal Processing Cup, Georgia Institute of Technology, Atlanta, Georgia

August 2016 – December 2016

Undergraduate Researcher for Dr. David Anderson, School of Electrical and Computer Engineering

- Created algorithms in C++ on Raspberry Pis to track and visually represent musical beats in real time
- Competed in a national IEEE-sponsored challenge against 32 other teams of undergraduate students

The V Foundation, North Carolina State University, Raleigh, North Carolina

August 2013 – May 2014

Paid Research Assistant for Dr. John Cavanagh, Department of Molecular & Structural Biochemistry

- Conducted biochemistry experiments in a lab funded by Jim Valvano's The V Foundation for Cancer Research

INSPIRE, NASA Langley Research Center, Langley, Virginia

June 2013

Research Assistant for Luther Jenkins

- Analyzed air circulation during critical takeoff and landing periods in wind tunnel tests for the United States Army

LEADERSHIP

Georgia Tech Women in Electrical and Computer Engineering

August 2014 – May 2019

Graduate Liaison

April 2018 – May 2019

- Provided academic advice, professional mentorship, and social support among women in engineering
- Guided fellow executive board members to meet and anticipate the needs of 230+ female graduate students

President

April 2017 – April 2018

- Managed an executive board of 18 women to build an inclusive network of female engineers on campus
- Advised department chairs and industry partners on strategies and initiatives to support women in engineering
- Developed repository of meeting presentations and executive transition procedures that are still currently used

Industry Relations Chair

April 2016 – April 2017

- Raised over \$36,000 in one academic year through corporate sponsorships to fully fund our annual budget
- Built professional development content and handled logistics for weekly meetings with industry recruiters

Freshman Liaison

April 2015 – April 2016

- Created a welcoming community to attract and retain new female electrical and computer engineering students
- Recruited high school seniors to increase undergraduate women in the department from 16% to 18% in 1 year

Georgia Tech Student Foundation

August 2014 – May 2019

Board of Trustees, Member at Large

April 2018 – May 2019

- Conducted institute-wide philanthropic campaigns with the Georgia Tech Foundation and Alumni Association
- Selected and trained future Board of Trustees executives, directors, and members for the following year

Chief Operating Officer

April 2017 – April 2018

- Supervised two directors responsible for student education of our \$1.4 million philanthropic endowment
- Directed the annual Gift to Tech award of nearly \$50,000 to an outstanding campus organization or project
- Led the restructuring process within our Development Committee responsible for recruiting donors

Director, Freshman Leadership Initiative

April 2016 – April 2017

- Managed a 20-person committee to promote philanthropy among current students and young alumni
- Directed the interview and committee selection process; established a yearlong timeline for promotional efforts
- Mentored first-year students to grow into leadership roles within the Student Foundation and across campus

Sophomore Adviser, Freshman Leadership Initiative

April 2015 – April 2016

- Added nearly 200 new donors to raise \$1000 in two weeks which was critical to meet annual donation goals
- Ran weekly meetings to teach students about marketing, networking, event planning, finance and investing

Member, Freshman Leadership Initiative

August 2014 – April 2015

- Selected as one of 16 students in the GT Class of 2018 into talent pipeline and professional development team

School of Electrical and Computer Engineering, Georgia Institute of Technology

August 2015 – May 2019

Senior Design Team Leader for RECONSO (see Research Projects section)

August 2017 – May 2018

- Managed a team of four students to meet both project-specific goals and general senior design timelines
- Facilitated collaboration as primary point of contact between electrical and aerospace faculty members

First-Year Seminar Team Leader for Dr. Joyelle Harris

August 2015 – December 2015

- Designed and led weekly seminars for 50+ students on professional development and industry knowledge

TEACHING & MENTORSHIP

Tutor, self-employed

September 2019 – present

Freelance Tutor and Mentor

- Mentored 5+ local high school female students to encourage their pursuit of technical degrees and disciplines
- Created review guides and practice problems in physics and calculus to raise confidence and exam scores
- Provided insight to students and parents for college prep, application essays, entrance exams, and student life

School of Electrical and Computer Engineering, Georgia Institute of Technology **August 2018 – May 2019**

Graduate Teaching Assistant for Professor Christina Bourgeois

- Taught engineers efficient and effective technical communication skills in academic and professional settings
- Advised 50+ students on technical reports, resume content, and interview techniques in 1:1 consultations
- Evaluated 150+ project proposals, research papers, and presentations to prepare for senior design deliverables

Georgia Tech Student Foundation, Georgia Institute of Technology **August 2016 – May 2019**

Board of Trustees Mentorship Director and Mentor

- Implemented yearlong professional mentorship program to pair upperclassmen with 16 first-year students
- Continued serving as a mentor as COO and as a Member at Large to personally mentor 4 students in a 1:1 setting

Georgia Tech Women in Engineering, Georgia Institute of Technology **August 2016 – May 2018**

M&M Mentorship Program Mentor

- Guided 4 undergrad women in electrical or computer engineering on academic, professional, and personal topics
- Attended monthly trainings, professional industry networking events, and social luncheons with mentees

School of Physics, Georgia Institute of Technology **August 2015 – May 2017**

Undergraduate Teaching Assistant for Dr. Ed Greco

- Facilitated labs and led help sessions for 90 students in introductory mechanics and electromagnetics classes
- Tutored students in one-on-one sessions covering general physics concepts and specific class assignments

PROFESSIONAL ORGANIZATIONS

IEEE **2016 – present**

Aerospace and Electronic Systems Society 2019

Communications Society 2019

Signal Processing Society 2016

Society of Women Engineers **August 2014 – present**

Professional Chapter May 2019 – present

Georgia Institute of Technology Chapter August 2014 – May 2019

HONORS & AWARDS

Eta Kappa Nu, Georgia Institute of Technology **August 2016 – May 2019**

Honor society within IEEE to promote scholarship, character, and attitude.

Provost Scholarship, Georgia Institute of Technology **August 2014 – May 2018**

One of 40 students selected from nearly 25,000 applicants for demonstrating extraordinary academic achievement, outstanding leadership skills, and high potential in and outside the classroom. Total award of about \$80,000.

Georgia Tech Women in Engineering Scholarships **March 2015 – March 2018**

Recognition of academic accomplishment and leadership skills among undergraduate female engineers.

George Family Foundation Scholarship, \$1,000 for an outstanding female engineering senior March 2018

Abbott Scholarship, \$2,000 March 2017

Rockwell Automation Scholarship, \$1,000 March 2016

Alcoa Scholarship, \$1,000 March 2015

Gold Award, Girl Scouts of the USA **August 2011**

Designed, organized, and led a robotics course for 20 underprivileged students at Kingswood Elementary in Cary, NC