Ab Ellis Mosca
(they\them)

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amosca01.github.io/aemosca/

Education

Tufts University — Medford, MA
Ph.D. in Computer Science, Advisor: Remco Chang — August 2021
Dissertation: Communicating with Visualization: The Importance of Simplicity

Honors:

2021 School of Engineering Outstanding Graduate Contributor to Engineering Education Award

Tufts University — Medford, MA
M.S. in Computer Science, Advisor: Remco Chang — May 2019

Smith College — Northampton, MA
B.A. in Mathematics, *magna cum laude* — May 2014
Honors:

Phi Beta Kappa, 2013

Pokora Senior Scholar Athlete, 2014 (recognizes senior scholar athlete with the highest GPA)

Professional Experience

Westfield State University — Westfield, MA
Assistant Professor, Data Science Program Lead — September 2023 -

Northeastern University — Boston, MA
Assistant Teaching Professor — September 2021 - August 2023

IQT Labs — Waltham, MA
Visualization Group Intern — June 2020 - August 2020

National Renewable Energy Lab — Golden, CO
Insight Center Intern — June 2018 – August 2018

Mathematica Policy Research — Cambridge, MA
Data Associate — June 2014 – July 2016

Grants

United States Department of Agriculture (USDA)
The Economic and Social Implications of Online Grocery Platforms for the U.S. Consumers and Food Supply Chains
2023-2026, $46,173
PIs: Norbert Wilson, Wylin Wilson, Carolyn Barnes, **Ab Mosca**, Remco Chang

Publications

[1] B.C. Braga, S.B. Cash, K. Sarson, R. Chang, **A. Mosca**, N.L.W. Wilson. The gamification of nutrition labels to encourage healthier food selection in online grocery shopping: A randomized controlled trial. *Appetite* 2023.

[2] B.C. Braga, S.B. Cash, K. Sarson, R. Chang, **A. Mosca**, N.L.W. Wilson. The creation of an online grocery store for experimental purposes: A pilot study. *Food Quality and Preference* Volume 109, 2023.

[3]] A. Suh, **A. Mosca**, S. Robinson, Q. Pham, D. Cashman, A. Ottley, and R. Chang. Inferential Tasks as an Evaluation Technique for Visualization. *EuroVis 2022 - Short Papers*. **Best Short Paper Award**

[4] **A. Mosca**, A. Ottley and R. Chang. Does Interaction Improve Bayesian Reasoning with Visualization?. *ACM CHI Conference on Human Factors in Computing Systems*, Yokohama, Japan, 2021.

[5] M. Procopio, **A. Mosca**, C. Scheidegger, E. Wu and R. Chang. Impact of Cognitive Biases on Progressive Visualization. *IEEE Transactions on Visualization and Computer Graphics*, 2021.

[6] **A. Mosca**, S. Robinson, M. Clarke, R. Redelmeier, S. Coates, D. Cashman, and R. Chang. Defining an Analysis: A Study of Client-Facing Data Scientists. *EuroVis 2019 - Short Papers*, 2019.

[7] D. Cashman, S. Rukh Humayoun, F. Heimerl, K. Park, S. Das, J.R. Thompson, B. Saket, **A. Mosca**, J. Stasko, A. Endert, M. Gleicher, and R. Chang. A User-based Visual Analytics Workflow for Exploratory Model Analysis. *Computer Graphics Forum*, 2019.

[8] G. Ryan, **A. Mosca**, R. Chang, and E. Wu. At a Glance: Pixel Approximate Entropy as a Measure of Line Chart Complexity. *IEEE Transactions on Visualization and Computer Graphics*, 2018.

[9] D. Cashman, G. Patterson, **A. Mosca**, N. Watts, S. Robinson, R. Chang. RNNbow: Visualizing Learning via Backpropagation Gradients in RNNs. *IEEE Computer Graphics and Applications*, 2018.

[10] Lester, R.S., Irvin, C.V., **Mosca, A.** & Bradnan, C. (2015). *Tipping the Balance: The Balancing Incentive Program and State Progress on Rebalancing Their Long-Term Services and Supports.* Medicaid.gov.

[11] **Mosca, A.** & Teitelbaum, N.D. (2015). Pancreas. In Brehm, B.A. (ed.), *Nutrition: Science, Issues, and Applications.* Santa Barbara, CA: Greenwood Press.

[12] **Mosca, A.** (2015). Microbiota and Microbiome. In Brehm, B.A. (ed.), *Nutrition: Science, Issues, and Applications.* Santa Barbara, CA: Greenwood Press.

[13] **Mosca, A.** (2015). Polyphenols. In Brehm, B.A. (ed.), *Nutrition: Science, Issues, and Applications.* Santa Barbara, CA: Greenwood Press.

Papers in Submission \Preparation

[14] A. Suh, Y. Jiang, **A. Mosca**, E. Wu, and R. Chang. A Grammar for Hypothesis-Driven Visual Analytics. (In preparation)

[15] A. Suh, **A. Mosca**, D. Cashman, E. Wu, and R. Chang. A Hypothesis-Based Framework for Evaluating Visualization and Visual Analytics Systems. (In preparation)

[16] V. Shah, and **A. Mosca**. What is Visualization for Communication? Design Guidelines and a Definition for this Subspace of Visualization. (In preparation)

Workshops and Posters

V. Shah, and **A. Mosca**. What is Visualization for Communication? Analyzing Four Years of VisComm Papers. Poster, *IEEE Conference on Information Visualization (InfoVis)*, 2023.

A. Mosca, A. Ottley, and R. Chang. Does Interaction Improve Bayesian Reasoning with Visualization? In *IEEE Visualization Workshop on Visualization for Communication (VisComm)*, 2020.

A. Mosca, Shannon Robinson, Meredith Clarke, Rebecca Redelmeier, Sebastian Coates, Dylan Cashman, and Remco Chang. Towards Data Science for the Masses: A Study of Data Scientists and Their Interactions with Clients. Poster, *IEEE Conference on Information Visualization (InfoVis)*, 2018.

D. Cashman, G. Patterson, **A. Mosca**, and R. Chang. RNNbow: Visualizing the Learning Process in Recurrent Neural Networks. In *IEEE Visualization Workshop on Visual Analytics for Deep Learning (VADL)*, 2017. **Best Paper Award**.

Gabriel Ryan, **A. Mosca**, Remco Chang, and Eugene Wu. Approximate Entropy as a Measure of Line Chart Complexity. Poster, *IEEE Conference on Information Visualization (InfoVis)*, 2017.

Undergraduate and Masters Research Mentoring

Vedanshi Shah Northeastern 2023 — Spring 2023, Fall 2022
Undergraduate Researcher, Cooperative Education in Visualization Research

Evan Suslovich Northeastern 2025 — Spring 2023
Undergraduate Researcher

Jake Phelan Northeastern 2025 — Spring 2023
Undergraduate Researcher

Simone Ritcheson Northeastern 2025 — Fall 2022
Undergraduate Researcher

Alison Picerno Northeastern 2025 — Fall 2022
Undergraduate Researcher

Smith SURF — Summer 2021
Smith Human Computation & Visualization Lab

Alice Dempsey Tufts 2021 — Fall 2020 –Summer 2021
VALT Undergraduate Researcher
Currently: Junior Associate Software Development Engineer at Publicis Sapient

Andrew Wang Tufts 2021 — Fall 2020 –Spring 2021
VALT Undergraduate Researcher
Currently: Data Science Intern at CyGlass

Helen Li Tufts 2023 — Fall 2020 –Spring 2021
VALT Undergraduate Researcher

Kate Hanson Tufts 2021 — Fall 2019 –Spring 2021
VALT Undergraduate Researcher
Currently: MS Student at Tufts University

Tania Valrani Tufts 2021 — Spring 2020
Master's Student Directed Study

Sammy Stolzenbach Tufts 2020 — Summer 2019 –Spring 2020
VALT Undergraduate Researcher
Currently: Data Analyst at New York Times

Sebastian Coates Tufts 2020 — Fall 2017 –Spring 2018
VALT Undergraduate Researcher
Currently: Co-founder at Immuto

Meredith Clarke Tufts 2019 — Summer 2017 –Spring 2018
VALT Undergraduate Researcher
Currently: Analyst at Education Resource Strategies

Rebecca Redelmeier Tufts 2019 — Summer 2017 –Spring 2018
VALT Undergraduate Researcher
Currently: Audience Engagement Associate at Committee to Protect Journalists

Julia Romero University of Texas at Austin 2020 Summer 2017
REU Student
Currently: PhD Student in Computer Science at University of Colorado at Boulder

Teaching Experience

Westfield State University Assistant Professor Fall 2023 -
Introduction to Data Science (MATH 0113 \CAIS 0103)
Introduction to Coding with Python (CAIS 0117)
Elementary Statistics (MATH 0108)

Northeastern University Assistant Teaching Professor Fall 2021 - Spring 2023
Information Visualization (DS 4200)
Data Science Programming Practicum (DS 2001)
Discrete Structures and Recitation (CS 1800 and 1802)

Tufts University Co-instructor Fall 2020, Spring 2021
Visualization Seminar (COMP 250)
Directed Study in Visual Analytics (COMP 194)

Northeastern University Instructor Summer 2019
Pre-Align Math Introduction Course

Tufts University Teaching Assistant Fall 2016 - Spring 2017, Spring 2019
Discrete Mathematics (COMP 61)
Computer Graphics (COMP 175)

Tufts University Undergraduate Research Coordinator Summer 2017
Visual Analytics Lab at Tufts (VALT)

Smith College Teaching Assistant Fall 2013 - Spring 2014
Calculus 1 (MTH 111)
Calculus 2 (MTH 112)
Introduction to Discrete Mathematics (MTH 153)
Linear Algebra (MTH 211)
Calculus 3 (MTH 212)
Modeling in the Sciences (MTH 205)
Spinelli Center for Quantitative Learning

Talks

Boston Museum of Science Invited Speaker Summer 2023
Talk to a Scientist - Pride Month

Tufts University Guest Lecture Fall 2019
Visual Analytics (COMP 150)

Reviewing Activities

IEEE Computer Graphics and Applications (CGA)
2022

ACM CHI Conference on Human Factors in Computing Systems (CHI)
2021, 2022

International Journal of Human - Computer Studies (IJHCS)
2020

IEEE Transactions on Visualization and Computer Graphics (TVCG)
2020, 2022

IEEE VIS: Visualization & Visual Analytics (VIS)
2021, 2022

IEEE Conference on Information Visualization (InfoVis)
2019, 2020

IEEE Conference on Visual Analytics Science and Technology (VAST)
2019, 2020

Eurographics Conference on Visualization (EuroVis)
2019

Workshop Organization

IEEE VIS Visualization for Social Good (vis4good)
2021, 2022, 2023 Papers/Program Committee

IEEE VIS Visualization for Communication (VisComm)
2021 Student Volunteer, *2022* Program Committee

IEEE VIS Machine Learning from User Interactions for Visualization and Analytics (MLUI)
2020, 2021 Organizer

Professional Memberships

Association for Computing Machinery (ACM)

IEEE Computer Society

American Statistical Association (ASA)

Fellowships

Cultural Competence in Computing (3C) Fellow
2022 - 2024

Service

Organizing Committee Fall 2023 -
IEEE VIS 2024

Teaching Assistant Committee Fall 2022 - Spring 2023
Khoury College, Northeastern University

Full-time Non-Tenure Track Hiring Committee Fall 2021 – Spring 2023
Khoury College, Northeastern University

Diversity and Inclusion Full-time Non-Tenure Track Hiring Subcommittee Fall 2021 – Spring 2023
Khoury College, Northeastern University