

Adam J. Coscia – Curriculum Vitae

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EDUCATION

<u>Ph.D. in Human-Centered Computing</u> , Georgia Institute of Technology	Atlanta, GA
GPA: 4.00 / 4.00 • Advised by Alex Endert	Expected 2025
<u>B.S. in Physics</u> , Stevens Institute of Technology	Hoboken, NJ
GPA: 3.98 / 4.00 • Minors in Mathematics and Computer Science	May 2020

RESEARCH EXPERIENCE

<u>Georgia Institute of Technology</u>	Atlanta, GA
Graduate Research Assistant • Advisor: Alex Endert	2020–present
<ul style="list-style-type: none">Developing interactive visual analytics tools that help people make sense of data by combining information visualization, machine learning, data mining, and human-computer interaction.Member of the Visual Analytics Lab.	
<u>NASA Jet Propulsion Laboratory</u>	Pasadena, CA
Machine Learning Lead • Advisor: Scott Davidoff	Summer 2023
<ul style="list-style-type: none">Developing automated science planning capabilities for planetary mission plans to support multi-instrument and team-driven science using a novel demonstration paradigm.Joint work between NASA Jet Propulsion Laboratory and Georgia Tech.Funded by JPL Summer Internship Program.	
Computer Science Lead • Advisor: Scott Davidoff	Summer 2021
<ul style="list-style-type: none">Built interactive data visualization combining linked 2D maps and 3D visualizations of taxa and geochemical values in sediment cores collected from the sea floor.Joint work between NASA Jet Propulsion Laboratory, Caltech, and the ArtCenter College of Design.Funded by JPL Summer Internship Program.	
<u>Stevens Institute of Technology</u>	Hoboken, NJ
Research Assistant • Advisors: Aron Lindberg, Amir Gandomi	2018–2020
<ul style="list-style-type: none">Developed statistical model in Python for connecting evolutionary trajectories of digital artifacts to performance outcomes in online communities.Funded by Stevens Pinnacle Scholars Program.	
<u>Katholieke Universiteit Leuven</u>	Leuven, Belgium
Visiting Research Scholar • Advisors: Lino da Costa Pereira, Tiago Abel de Lemos Lima	Summer 2017
<ul style="list-style-type: none">Built data visualization interface in Python for managing simulations of ion channeling in single crystals, to be used in ion beam analysis of topological materials.Funded by both Katholieke Universiteit Leuven and Stevens Pinnacle Scholars Program.	

INDUSTRY EXPERIENCE

New York Life Insurance Company	New York, NY
Machine Learning / Operations Intern • Supervisor: Paul Janis	Summer 2020
<ul style="list-style-type: none">Engineered multiple feature extraction pipelines interfaced by Domino platform and integrated with existing Hadoop infrastructure.Produced model monitoring metric reports for stakeholders and internal data science team.	
Data Platform Engineering Intern • Supervisor: Paul Janis	Summer 2019
<ul style="list-style-type: none">Built various scalable programs and data-handling procedures for multiple teams to leverage complex, low-level data lake tools with efficient, cost-effective, and easy-to-use interfaces.	

AWARDS and HONORS

College of Computing (CoC) Poster Award, Georgia Institute of Technology	2023
<ul style="list-style-type: none">CRIDC Poster Competition winner: "KnowledgeVIS: Visualizing What Language Models Have Learned."	
Executive Vice President for Research (EVPR) Poster Award, Georgia Institute of Technology	2021
<ul style="list-style-type: none">CRIDC Poster Competition winner: "Lumos: Increasing Awareness of Biases during Visual Data Analysis."	
President's Fellowship, Georgia Institute of Technology	2020
<ul style="list-style-type: none">Four-year semesterly stipend award; selected upon admission from top 10% of applicant pool.	
Alfred M. Mayer Prize, Stevens Institute of Technology	2020
<ul style="list-style-type: none">Awarded to senior ranked first in all physics courses taken during undergraduate career.	
Sigma Pi Sigma Physics Honor Society, American Institute of Physics	2019
<ul style="list-style-type: none">Inducted as a Lifetime Member.	
Distinguished Teaching Assistant, Stevens Institute of Technology	2018
<ul style="list-style-type: none">Awarded to student faculty member nominated for creating outstanding classroom environment.	
Presidential Scholarship, Stevens Institute of Technology	2016
<ul style="list-style-type: none">Four-year, half-tuition award; selected for academic excellence in high school.	

PUBLICATIONS and PRESENTATIONS

Journal Articles

- Coscia A., Holmes L., Morris W., Crossley S., Endert A. **iScore: Visual Analytics for Interpreting How Language Models Score Student Summaries in Intelligent Textbooks**. *ACM Conference on Intelligent User Interfaces (ACM IUI)*. Under review.
- Coscia A., Sapers H.M., Deutsch N., Khurana M., Magyar J.S., Parra S.A., Utter D.R., Wipfler R.L., Caress D.W., Martin E.J., Paduan J.B., Hendrie M., Lombeyda S., Mushkin H., Endert A., Davidoff S., Orphan V.J. **DeepSee: Multidimensional Visualizations of Seabed Ecosystems**. *ACM Conference on Human Factors in Computing Systems (CHI)*. Under review.
- Guo G., Kumar A.M.S., Gupta A., Coscia A., MacLellan C., Endert A. **Visualizing the Provenance of Intelligent Tutor Interactions towards Responsive Pedagogy**. *ACM Conference on Human Factors in Computing Systems (CHI)*. Under review.
- Coscia, A., Endert, A. **KnowledgeVIS: Interpreting Language Models by Comparing Fill-in-the-Blank Prompts**. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*. Under review.
- Coscia, A., Suh, A., Chang, R., Endert, A. **Preliminary Guidelines for Combining Data Integration and Visual Data Analysis**. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*. Under review.

6. Narechania, A., Coscia, A., Wall, E., Endert, A. **Lumos: Increasing Awareness of Analytic Behavior during Visual Data Analysis.** *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS, 2021)*, 2021.
7. Wall, E., Narechania, A., Coscia, A., Paden, J., Endert, A. **Left, Right, and Gender: Exploring Interaction Traces to Mitigate Human Biases.** *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS, 2021)*, 2021.

Workshop Papers

1. Coscia, A., Chau, D., Endert, A. **Toward a Bias-Aware Future for Mixed-Initiative Visual Analytics.** *Workshop on TRust and Expertise in Visual Analytics (TRES) at IEEE VIS, 2020.*

Posters

1. Coscia, A., Endert, A. **KnowledgeVIS: Visualizing What Language Models Have Learned.** *Career, Research, and Innovation Development Conference (CRIDC), Atlanta, GA, March 2023.*
2. Narechania, A., Coscia, A., Wall, E., Endert, A. **Lumos: Increasing Awareness of Biases during Visual Data Analysis.** *Career, Research, and Innovation Development Conference (CRIDC), Atlanta, GA, March 2021.*
3. Coscia, A. **Correlating Long-Term Innovation with Success in Career Progression.** *Business Intelligence & Analytics (BI&A) Corporate Networking Event, Hoboken, NJ, November 2018.*
4. Coscia, A. **Correlating Long-Term Innovation with Success in Career Progression.** *Pinnacle Scholar Summer Research Poster Session, Hoboken, NJ, November 2018.*

TEACHING and MENTORING

<u>Georgia Institute of Technology</u>	Atlanta, GA
Graduate Teaching Assistant • Data Visualization Principles (CS 6730) • Instructor: Alex Endert	Fall 2022
• Assisted professor with grading, exam reviews, in-class worksheets, and testing material preparation.	
<u>Stevens Institute of Technology</u>	Hoboken, NJ
Course Assistant • Honors Electricity & Magnetism (PEP 112) • Instructor: Christopher Search	2018–2020
• Assisted professor with grading, exam reviews, in-class worksheets, and testing material preparation.	
Course Assistant • Electricity & Magnetism (PEP 112) • Instructor: Robert Pastore	2018–2020
• Assisted lecturer by running exam reviews each semester for an average class size of 200 students.	
Teaching Assistant • Intro to Scientific Computing (CS 105) • Instructor: Dimitrios Damopoulos	2017–2020
• Instructed 15-25 students weekly via in-person labs using MATLAB assignments designed to teach basic scientific computing paradigms.	
• Developed course material with instructor supervision.	
Mentor • Pinnacle Scholar Peer Advisor Program	2017–2019
• Mentored 4-6 Pinnacle Scholar freshman representing different majors each academic year.	
• Provided guidance on internships, classes, international experiences, campus resources; took students on excursions into Hoboken.	

GRANTS and FUNDING

<u>Stevens Institute of Technology</u>	Hoboken, NJ
Pinnacle Scholar Summer Institutional Research Program	Summer 2018
• \$5000 stipend from <i>Stevens Institute of Technology</i>	
International Summer Abroad Internship Program	Summer 2017
• €3000 stipend, Department of Physics and Astronomy, <i>Katholieke Universiteit Leuven</i>	
• \$5000 stipend, Pinnacle Scholars Program, <i>Stevens Institute of Technology</i>	

SERVICE and ASSOCIATIONS

Reviewer

IEEE VIS Conference (VIS)	2022, 2023
EuroVis Conference (EuroVis)	2023
IEEE Transactions on Visualization and Graphics (TVCG)	2022, 2023

Member

Sigma Pi Sigma (SPS) Physics Honor Society	2019—present
American Physical Society (APS)	2016—2020

COMMUNITY ENGAGEMENT

Encouraging Women Across All Borders (EWAAB)

New York, NY

Mentor • Beyond Mentorship Program	Fall 2022
• Connect one-on-one with students to discuss professional topics ranging from general professional advice, to applying for opportunities, to discovering new fields.	

Stevens Institute of Technology

Hoboken, NJ

Co-panelist • Panel: “Applying to Ph.D. Programs”	Fall 2020
• Shared Ph.D. application experiences with undergraduate Stevens’ Pinnacle and Clark Scholars.	
Treasurer • Society of Physics Students • Supervisor: Edward Whittaker	2017—2020
• Requested and defended semesterly budget between \$2000 and \$5000 .	
• Planned lectures, research colloquiums, scheduling events for physics majors.	
• Led organization outreach programs in the Hoboken Grade Schools, both on and off-campus.	

SKILLS and TECHNIQUES

Data Visualization

- **Tools** Java/TypeScript, Python, R, Tableau, MATLAB
- **Libraries** D3.js, Three.js, matplotlib, seaborn, ggplot2

Machine Learning (ML) / Modeling

- **Tools** Python, R
- **Libraries** pandas, NumPy, SciPy, scikit-learn, py-torch, transformers

Web Development

- **Tools** Vue.js, React, Angular, Node.js
- **Libraries** jQuery, Bootstrap, D3.js, Socket.IO / Express / Axios

Data Acquisition and Warehousing

- **Tools** SQL, Python, Apache Hive / Hadoop / Spark, Oracle, Redis, AWS S3
- **Libraries** Scrapy, BeautifulSoup

Other

- **Tools** Git, Jupyter Notebook, Visual Studio Code, Java, C/C++

RELEVANT COURSEWORK

Georgia Institute of Technology

Atlanta, GA

Human-Computer Interaction

- Principles of User Interface Software (CS 6456)
- Qualitative Methods for Design of Human Computer Interaction (CS 6456)
- Information Visualization (CS 7450)

Cognitive Science

- Introduction to Cognitive Science (CS 6795)

Stevens Institute of Technology

Hoboken, NJ

Computer Science

- Discrete Mathematics (CS 135)
- Data Structures (CS 284)
- Algorithms (CS 385)
- Creative Problem Solving and Team Programming (CS 370)
- Database Management Systems (CS 442)

Mathematics

- Differential Equations (MA 221)
- Multivariable Calculus (MA 227)
- Linear Algebra (MA 232)
- Advanced Calculus (Real Analysis) (MA 547)

Statistics

- Probability and Statistics (MA 222)
- Intermediate Statistics (MA 331)

Math Methods / Applications

- Mathematical Methods for Physicists I & II (Tensors, Fluids, Dynamics) (PEP 527 & 528)
- Computational Physics (Numerical Methods, Machine Learning) (PEP 520)