Adam J. Coscia – Curriculum Vitae

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EDUCATION

Ph.D. in Human-Centered Computing | Atlanta, GA
Georgia Institute of Technology | Expected May 2026

Dissertation: *Visual Analytics for Trustworthy Large Language Models in Education*
Advisor: Alex Endert
Committee: Alex Endert, Duen Horng (Polo) Chau, Cindy Bearfield-Xiong, Yalong Yang, Scott Crossley
GPA: 4.00/4.00

B.S. in Physics | Hoboken, NJ
Stevens Institute of Technology | May 2020

Minors: Mathematics, Computer Science
GPA: 3.98/4.00, Graduated top in physics class

RESEARCH EXPERIENCE

Georgia Institute of Technology | Atlanta, GA
Graduate Research Assistant | *Visual Analytics Lab* | 2020—present

- Advisor: Alex Endert
- Developing interactive visual analytics tools that help people make sense of data by combining information visualization, machine learning, and human-computer interaction.

Adobe Research | San Jose, CA
Machine Learning Research Lead | *AI Experiences Lab* | Summer 2024

- Advisors: Shunan Guo, Eunyee Koh
- Built a novel chat interface large language models (LLMs) to improve sensemaking of conversational LLM responses for everyday users using LLM-powered Adobe products.

NASA Jet Propulsion Laboratory (JPL) | Pasadena, CA
Machine Learning Research Lead | *Human-Interfaces Group* | Summer 2023

- Advisors: Scott Davidoff, Tiago Vaquero
- Developed automated science planning capabilities for planetary missions to support multi-instrument and team-driven science using a novel demonstration paradigm.

Computer Science Lead | *Data to Discovery* | Summer 2021

- Advisors: Scott Davidoff, Santiago Lombeyda, Hillary Mushkin, Maggie Hendrie
- Built interactive data visualization combining linked 2D maps and 3D visualizations of taxa and geochemical values in sediment cores collected from the sea floor.

Stevens Institute of Technology | Hoboken, NJ
Research Assistant | *Information Systems and Analytics* | 2018—2020

- Advisors: Aron Lindberg, Amir Gandomi
- Developed statistical model in Python for connecting evolutionary trajectories of digital artifacts to performance outcomes in online communities.

Katholieke Universiteit Leuven
<div align="right">Leuven, Belgium</div>

Visiting Research Scholar | *Department of Physics and Astronomy*
<div align="right">Summer 2017</div>

- Advisors: Lino da Costa Pereira, Tiago Abel de Lemos Lima
- 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.

INDUSTRY EXPERIENCE

New York Life Insurance Company
<div align="right">New York, NY</div>

Machine Learning / Operations Intern | *Center for Data Science and Artificial Intelligence*
<div align="right">Summer 2020</div>

- Supervisor: Paul Janis
- 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 | *Center for Data Science and Analytics (CDSA)*
<div align="right">Summer 2019</div>

- Supervisor: Paul Janis
- 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

Best Poster Award @ CRIDC 2023
<div align="right">2023</div>

- Georgia Tech's College of Computing (CoC) Award
- For: *KnowledgeVIS: Visualizing What Language Models Have Learned*

Best Poster Award @ CRIDC 2021
<div align="right">2021</div>

- Georgia Tech's Executive Vice President for Research (EVPR) Award
- For: *Lumos: Increasing Awareness of Biases during Visual Data Analysis*

President's Fellowship
<div align="right">2020</div>

- Awarded by Georgia Institute of Technology
- Four-year semesterly stipend award; selected upon admission from top 10% of applicant pool.

Alfred M. Mayer Prize
<div align="right">2020</div>

- Awarded by Stevens Institute of Technology
- Given to senior ranked first in all physics courses taken during undergraduate career.

Inducted into Sigma Pi Sigma Physics Honor Society
<div align="right">2019</div>

- Awarded by American Institute of Physics
- Inducted as a lifetime member.

Distinguished Teaching Assistant
<div align="right">2018</div>

- Awarded by Stevens Institute of Technology
- Given to student faculty member nominated for creating outstanding classroom environment.

Presidential Scholarship
<div align="right">2016</div>

- Awarded by Stevens Institute of Technology
- Four-year, half-tuition award; selected for academic excellence in high school.

PUBLICATIONS and PRESENTATIONS

Conference Proceedings and Journal Articles

1. **Preliminary Guidelines for Combining Data Integration and Visual Data Analysis**
   Adam Coscia, Ashley Suh, Remco Chang, and Alex Endert
   IEEE Transactions on Visualization and Computer Graphics **(TVCG)**, *2024*

2. **KnowledgeVIS: Interpreting Language Models by Comparing Fill-in-the-Blank Prompts**
   Adam Coscia and Alex Endert
   IEEE Transactions on Visualization and Computer Graphics **(TVCG)**, *2024*

3. **Visualizing the Provenance of Intelligent Tutor Interactions towards Responsive Pedagogy**
   Grace Guo, Aishwarya Mudgal Sunil Kumar, Adit Gupta, Adam Coscia, Chris MacLellan, and Alex Endert
   International Conference on Advanced Visual Interfaces **(AVI)**, *2024*

4. **DeepSee: Multidimensional Visualizations of Seabed Ecosystems**
   Adam Coscia, Haley M. Sapers, Noah Deutsch, Malika Khurana, John S. Magyar, Sergio A. Parra, Daniel R. Utter, Rebecca L. Wipfler, David W. Caress, Eric J. Martin, Jennifer B. Paduan, Maggie Hendrie, Santiago Lombeyda, Hillary Mushkin, Alex Endert, Scott Davidoff, and Victoria J. Orphan
   ACM Conference on Human Factors in Computing Systems **(CHI)**, *2024*

5. **iScore: Visual Analytics for Interpreting How Language Models Automatically Score Summaries**
   Adam Coscia, Langdon Holmes, Wesley Morris, Joon Suh Choi, Scott Crossley, and Alex Endert
   ACM Conference on Intelligent User Interfaces **(IUI)**, *2024*

6. **Lumos: Increasing Awareness of Analytic Behavior during Visual Data Analysis**
   Arpit Narechania, Adam Coscia, Emily Wall, and Alex Endert
   IEEE Transactions on Visualization and Computer Graphics **(TVCG)**, *2022. Proceedings of IEEE VIS, 2021*

7. **Left, Right, and Gender: Exploring Interaction Traces to Mitigate Human Biases**
   Emily Wall, Arpit Narechania, Adam Coscia, Jamal Paden, and Alex Endert
   IEEE Transactions on Visualization and Computer Graphics **(TVCG)**, *2022. Proceedings of IEEE VIS, 2021*

Workshop Papers

1. **Toward a Bias-Aware Future for Mixed-Initiative Visual Analytics**
   Adam Coscia, Duen Horng (Polo) Chau, and Alex Endert
   Workshop on TRust and EXpertise in Visual Analytics (TREX) at IEEE VIS, 2020

Posters

1. **iScore: Visual Analytics for Interpreting How Language Models Automatically Score Summaries**
   Adam Coscia, Langdon Holmes, Wesley Morris, Joon Suh Choi, Scott Crossley, and Alex Endert
   Career, Research, and Innovation Development Conference (CRIDC), Atlanta, GA, Feb 2024.

2. **iScore: Visual Analytics for Interpreting How Language Models Automatically Score Summaries**
   Adam Coscia, Langdon Holmes, Wesley Morris, Joon Suh Choi, Scott Crossley, and Alex Endert
   C21U Annual Symposium on Generative Futures: Revolutionizing Learning with Artificial Intelligence, Atlanta, GA, Sep 2023.

3. **KnowledgeVIS: Visualizing What Language Models Have Learned**
   Adam Coscia and Alex Endert
   Career, Research, and Innovation Development Conference (CRIDC), Atlanta, GA, Feb 2023.

4. **Lumos: Increasing Awareness of Biases during Visual Data Analysis**
   Arpit Narechania, Adam Coscia, Emily Wall, and Alex Endert
   Career, Research, and Innovation Development Conference (CRIDC), Atlanta, GA, Feb 2021.

5. **Correlating Long-Term Innovation with Success in Career Progression**
   Adam Coscia, Aron Lindberg
   Business Intelligence & Analytics (BI&A) Corporate Networking Event, Hoboken, NJ, Nov 2018.

6. **Correlating Long-Term Innovation with Success in Career Progression**
   Adam Coscia, Aron Lindberg
   Pinnacle Scholar Summer Research Poster Session, Hoboken, NJ, Nov 2018.

PRESS

1. **Visualization Tool Helps Oceanographers Predict Sediment Sample Hotspots**
   Jul 2024 | Nathan Deen @ School of Interactive Computing, Georgia Tech
   https://www.cc.gatech.edu/news/visualization-tool-helps-oceanographers-predict-sediment-sample-hotspots

2. **Adam Coscia Presents Visualizations for Interpreting Large Language Models at GVU Center Research Showcase**
   Apr 2023 | NSF AI Institute for Adult Learning in Online Education (AI-ALOE)
   https://aialoe.org/coscia-presents-visualizations-for-interpreting-large-language-models/

3. **DeepSEE: A Virtual Window Under the Waves**
   Nov 2021 | Serg Parra @ Schmidt Ocean Institute
   https://schmidtocean.org/cruise-log-post/deepsee-a-virtual-window-under-the-waves/

TEACHING

Georgia Institute of Technology	Atlanta, GA
Graduate Teaching Assistant	*Data Visualization Principles (CS 6730)*	Fall 2022

- Instructor: Alex Endert
- Assisted professor with grading, reviews, worksheets, and testing material preparation.

Stevens Institute of Technology	Hoboken, NJ
Course Assistant	*Honors Electricity & Magnetism (PEP 112)*	2018—2020

- Instructor: Christopher Search
- Assisted professor with grading, reviews, worksheets, and testing material preparation.

Course Assistant	*Electricity & Magnetism (PEP 112)*	2018—2020

- Instructor: Robert Pastore
- Ran exam reviews each semester for an average class size of 200 students.

Teaching Assistant	*Intro to Scientific Computing (CS 105)*	2017—2020

- Instructor: Dimitrios Damopoulos
- Instructed 15-25 students weekly via in-person labs using MATLAB assignments designed to teach basic scientific computing paradigms. Developed course material with instructor.

MENTORING

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
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

Incorporating Knowledge Graphs and Large Language Models into Visual Text Analysis Tools 2024
Laboratory for Analytic Sciences (LAS) @ North Carolina State University
- Co-PI: Alex Endert
- One-year funding (full tuition + graduate stipend)

Correlating Long-Term Innovation with Success in Career Progression 2018
Pinnacle Scholar Summer Institutional Research Program
- Co-PI: Aron Lindberg
- Funded $5000 from Stevens Institute of Technology

Managing Simulations of Ion Channeling in Single Crystals 2017
International Summer Abroad Internship Program
- Co-PI: Lino da Costa Pereira
- Funded €3000 from Department of Physics and Astronomy @ Katholieke Universiteit Leuven
- Funded $5000 from Pinnacle Scholars Program @ Stevens Institute of Technology

SERVICE and ASSOCIATIONS

Reviewer
IEEE VIS Conference (**VIS**) 2022, 2023, 2024
IEEE Transactions on Visualization and Graphics (**TVCG**) 2022
EuroVis Conference (**EuroVis**) 2023, 2024
ACM Conference on Human Factors in Computing Systems (**CHI**) 2024
ACM Transactions on Interactive Intelligent Systems (**TIIS**) 2024

Member
ACM + **SIGCHI** Member 2023—present
Sigma Pi Sigma (**SPS**) Physics Honor Society 2019—present
American Physical Society (**APS**) 2016—2020

COMMUNITY ENGAGEMENT

Stevens Institute of Technology Hoboken, NJ
Co-panelist | *Panel: "Applying to Ph.D. Programs"* Fall 2020
- Shared Ph.D. application experience with undergraduate Stevens' Pinnacle and Clark Scholars

Treasurer | *Society of Physics Students*   2017—2020
- Supervisor: Edward Whittaker
- 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)