

# JOE HILLEARY

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## EDUCATION

**Tufts University** Medford, MA **May 2024**  
*Master of Science, Computer Science*  
*Data-Driven Decision Making Fellow (National Science Foundation Research Trainee)*

**Bowdoin College** Brunswick, ME **May 2020**  
*Bachelor of Arts, History, Minor in Mathematics, cum laude with departmental honors*

**Relevant Coursework:** Visual Analytics, Digital Text Analysis, Probability, Statistics, Advanced (Bayesian) Statistics, Spatial Statistics, Database Systems, Machine Learning and Datamining, Deep Neural Networks, Teaching Writing: Theory & Practice

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## TECHNICAL EXPERIENCE

**Massachusetts Bay Transportation Authority - OpsAnalytics** Boston, MA **June 2024 – Present**  
*Data Analyst*

- Developed machine learning models, dashboards, and lightweight apps as well as completed ad hoc analyses in service of the Operations Department with a particular focus on the Operations Control Center
- Spearheaded multiple team initiatives, including GitHub adoption, evaluation of project intake procedures, standardization of presentations, and application design guidelines

**Data Intensive Studies Center** Tufts University **September 2022 – January 2024**  
*Research Intern*

- Consulted on and provided technical assistance for a project related to water diplomacy, analyzing digital texts and creating custom research tools in Python that leveraged natural language processing technologies
- Led an initiative to map the landscape of data science teaching and research across the university, interviewing approximately 40 faculty and staff and synthesizing findings into a public report

**Network Language Toolkit Project** Tufts University **June 2023 - September 2023**  
*Research Assistant*

- Advanced the creation of a suite of tools for analyzing scanned emails from responses to Freedom of Information Act requests
- Built an RDF-based knowledge graph for modeling email threads using open-source tools in Python

**Eckerson Group** Hingham, MA (remote) **September 2020 – July 2022**  
*Senior Research Analyst*

- Advised an audience of more than 11,000 email subscribers, consisting primarily of business leaders from Fortune 2000 organizations, on data strategy and emerging concepts in data technology, publishing [monthly articles](#), hosting webinars with industry partners, and writing white papers
- Composed comprehensive long-form research reports on the data analytics industry, covering topics ranging from Data Storytelling and Self-Service Analytics to Data Exchanges, DataOps, and Knowledge Graphs
- Cultivated a following of over 2000 readers on LinkedIn as a thought leader in the analytics space with some posts reaching more than 200,000 impressions

**Osher Map Library** Portland, ME **October 2021 – June 2022**  
*Metadata and Digital Humanities Intern*

- Analyzed and delivered a report on the metadata flows and practices of a research and teaching library with nearly 500,000 cartographic items, helping staff members to understand how their data entry impacted the information available on holdings
- Aided in the creation of a data back-end for a collection of hundreds of historic mill plans as part of a project to make the plans digitally accessible to researchers, reviewing and reconciling existing metadata for document collections using Google Apps Script
- Tested a library website redesign to ensure features were ready for public launch

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## PUBLIC SERVICE EXPERIENCE

**Seeds of Hope** Biddeford, ME **September 2021 – October 2022**  
*Board Member*

- Served on the board of directors for a neighborhood center that operates a soup kitchen, offers seasonal warming and cooling centers, and provides employment support, digital literacy training, and healthcare navigation assistance for those in need in the

greater Biddeford area

- Oversaw the search and hiring process for a new executive director following the retirement of the organization's founder

**Portland Adult Education** Portland, ME

**September 2019 – August 2021**

*Tutor/Classroom Assistant*

- Taught basic computer skills to English language learners, delivering curricula on spreadsheets, business letters, and Google Drive; creating vocab lists; developing exercise templates; and working one-on-one with students
- Tutored native Arabic speaker in English reading and pronunciation, providing weekly lessons and reading activities

**Portland Housing Authority** Portland, ME

**June 2018 – August 2018**

*Summer Fellow*

- Synthesized data into summary reports which tracked key metrics across three in-house and national financial stability indices, enabling a public housing authority with over 6,500 majority immigrant and refugee residents to provide more targeted services
- Delivered visual data representations and created data narratives for non-technical stakeholders across a variety of ad-hoc projects including sales projections for one resident's small business pitch to a Maine television entrepreneurship show
- Wrote a successful \$150,000 grant application to provide funding for a full-time financial stability coach, drafted program manuals, and designed a curriculum to teach financial literacy and design thinking to approximately 25 students, all in the support of a HUD-funded family and financial stability program and a leadership and community service summer youth program

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**RESEARCH AND TEACHING EXPERIENCE**

**Interdisciplinary Research in Technology & Society** Tufts University

**June 2023 – May 2024**

*Co-founder and Treasurer*

- Planned a symposium on AI Governance as part of a graduate student organization dedicated to the discussion and study of the ethical and social implications of technology

**The Perseus Project** Tufts University

**June 2023 – May 2024**

*Research Assistant*

- Architected a workflow using Python libraries, that would start with raw digital text and produce the files needed to support transliteration, treebanking, translation alignment, and part of speech analysis features within a digital reading environment
- Produced an annotated digital edition of the Autobiography of Omar Bin Seid for the next generation of the Perseus Library, an online cultural heritage collection

**Departments of Computer Science and Urban Policy and Planning** Tufts University

**January 2023 – December 2023**

*Teaching Assistant*

- Collaborated with the instructor to develop resources and provide feedback for a 35-person course on data surveillance, helping students to deepen their understanding of technology's social and political aspects
- Introduced a class of approximately 15 students to the fundamentals of programming in Python and answered student questions about concepts in coding and geographic information systems (GIS)

**Center for Learning and Teaching** Bowdoin College

**September 2017 – May 2020**

*Head Writing Assistant*

- Oversaw the on-campus writing center in conjunction with the faculty head, planning development workshops, recruiting new tutors, and crafting a cohesive vision and roadmap for expanding the center's role on campus
- Facilitated student writers in the improvement of their assignments at various stages ranging from thesis generation to final edits

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**SKILLS AND CERTIFICATIONS**

**PROGRAMMING LANGUAGES, LIBRARIES, AND FRAMEWORKS:** Python, SQL, R, Java, JavaScript, Pandas, NumPy, Matplotlib, scikit-learn, NetworkX, PyTorch, BeautifulSoup, GeoPandas, spaCy, Flask, React, Node, D3

**SOFTWARE AND TOOLS:** Tableau ([Author Certification](#)), PowerApps, Excel, PowerPoint, ArcGIS, PostgreSQL, GitHub

**ADDITIONAL CERTIFICATIONS:** [Lean Six Sigma Green Belt Certification](#), [IBM Professional Certificate in Data Science](#)

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Critical Language Scholar, Boren Scholar, National Merit Scholar, Bowdoin Faculty Scholar, Sarah and James Bowdoin Scholar (Dean's List), Eagle Scout, Sherman David Spector '50 Award Recipient, Best Presentation Visual Analytics 2023