

# Ella Grady

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## SKILLS

**Languages/Formats:** Python, Java, C, SQL, Bash/Shell, HTML, CSS, Javascript, JSON, XML, NoSQL, R, Scheme

**Frameworks/Other Software:** Git, Jira, Docker, AWS, AWS CDK, PostgreSQL, Flask, Command Line Interfaces, Jenkins, Spring Boot, Tableau, Confluence, Amazon Redshift, MongoDB, Wireshark

## PROFESSIONAL EXPERIENCE

### Software Engineer

August 2024 - Present

United States Geological Survey (USGS), United States Digital Corps Fellowship (USDC) - Remote

- Support the Water Mission Area of the USGS as a full stack engineer on a team of 3-4, delivering features independently and collaboratively, working primarily in Python, Java, and SQL
- Led cloud deployment process and other system modernization efforts and upkeep of water data projects used by researchers and policy makers to inform decisions on water, including the [Water Quality Portal](#) (publishes 400M+ records from 1,000+ contributing groups) and [National Groundwater Monitoring Network](#) (publishes data from 20,000+ locations and ~40 agency providers), supporting accessibility and visibility of water resource data
- Conduct changes amongst an outdated tech stack and government limitations to bring systems up to modern standards
- Manage millions of data records, data retrieval processes, data cleansing, and publishing of data in UI frameworks, including modifying ETL process to free up 900 GB of storage space, saving ~\$1300 on annual storage costs
- Establish and contribute to a cloud deployment process, researching and recommending AWS cloud development kit. Implementing deployment through Docker containerization and CDK pipeline for Python and Java applications
- Present regular demos of accomplished work
- Research, present, and lead learning & development sessions regularly as part of fellowship

### Data Technology Intern

June 2023 – August 2023

Global Atlantic Financial Group - Boston, Massachusetts

- Built out Redshift data warehousing technologies' functionality through agile scrum development
- Documented program development in formal standards for future referencing on team's Confluence pages
- Collaborated with intern team to recommend business programs enhancing values of diversity, equity, inclusion

### Customer Satisfaction Process & Technology Intern

May 2022 – August 2022

L.L. Bean - Freeport, Maine

- Analyzed customer sentiment for major e-commerce brand, collaboration with rest of Customer Experience team
- Recommended changes to current processes based on findings of data analysis
- Developed SQL scripts, Java data analytics processes, and documentation for long term utilization

## LEADERSHIP EXPERIENCE

### Vice President of Clark Competitive Computing Club

August 2023 – May 2024

Clark University - Worcester, Massachusetts

- Collaborated with 3 fellow leaders to hold events, manage our roster of 70+ students, recruit and promote as necessary, create agenda/curriculum for club events, workshops, discussions, and outreach, and overall build a community
- Co-facilitated leadership meetings on event planning and club management and club-wide events with president
- Championed, planned, and hosted several outreach events to encourage kids in Worcester to pursue CS, teaching coding through Lego robot education kits, workshops of 10-20 kids
- Planned, promoted, managed, and judged two 48-hour hackathon of 30-40 participants in Fall '23 & Spring '24
- Doubled annual budget from \$3,500 to \$7,000 through budget proposals and presentations, resulting from demonstrated work and recognized benefit to campus and student body

### Member of Political Science Department's DEI Working Group

March 2023 – May 2024

Clark University - Worcester, Massachusetts

- Collaborated with ~10 others to ensure department fulfills outlined goals/values for diversity, equity, and inclusion
- Provided oversight to department and faculty in creating community that reflects our members within the department
- Worked closely with faculty to plan and host events for student engagement with the department, such as meet and greets and guest lectures

## PROJECTS

### National Ground-Water Monitoring Network Cloud Deployment

**January 2025 - Present**

- Researched and recommended the use of AWS cloud development kit to deploy website
- Built out bare bones template for usage by ~8 different applications and 5 different frameworks, including Maven, Tomcat, Spring, Geoserver, and Python
- Implemented Docker containerization for different types of applications, handling static content and necessary resources for application containers
- Customized Gitlab pipelines for deployment based on deployment tiers and application requirements
- Troubleshoot network issues for cloud deployment, managing interactions and traffic to ECS Fargate instances
- Managed stacks in CloudFormation, analyzing network traffic, health checks, service functions

### The Reality of AI, US National Security, and Global Power Dynamics

**January 2024 – May 2024**

- Conducted in-depth analysis of AI's implications on US national security, focusing on threats and mitigation strategies, explaining technical AI topics for non-technical audience
- Collated research from academic journals, articles, and government documents, comparing theories and expert opinions
- Developed a case study on autonomous weapons, exploring their potential impact and policy responses
- Analyzed the current AI security landscape and proposed comprehensive policies to address emerging challenges

### Global Atlantic SQL Parser and Data Lineage Mapper

**June 2023 – August 2023**

- Developed Python programs to parse SQL queries to single string and databases to dictionaries for financial data
- Designed logic and code mapping data lineage across AWS Redshift databases through data processing (Extract, Transform, and Load), producing end-to-end mapping, for tables with thousands of rows, 100s of columns from raw insertion to business standard formatting for long term utilization
- Loaded mappings to Redshift table, created a Tableau report for business users to access

### L.L.Bean Customer Experience in Shipping Analysis

**July 2022 – August 2022**

- Developed SQL script to gather data related to order shipping information for FY 2021 and 2022, approximately 1.5M orders, comparing to internal delivery quote scores
- Analyzed numerical and customer sentiment data to determine customer's experience from time of order to arrival
- Recommended changes based on financial costs if package delivery quotes were changed and more arrived late

### International Organizations' Influence on Data Privacy Regulations

**March 2022 – April 2022**

- Researched international organizations, including European Union, and Organization for Economic Cooperation and Development, to understand policies on data privacy and positions on protecting sensitive data
- Collated research from variety of academic journals, articles, and organizations' policies, comparing global policies
- Analyzed policies and drew conclusions on the importance of the role international organizations play in data privacy as the internet and technology become increasingly globalized

### Mask Wearers and Who They Voted For

**December 2020**

- Designed Python program to create a graphical user interface window of each state in the United States
- Compared data from the 2020 presidential election and results of a New York Times study on mask wearing per state
- Created color-coded map of the nation based on the results of the election

## EDUCATION

**Clark University** - Worcester, Massachusetts

**August 2020 – May 2024**

Bachelor of Arts in Computer Science and Political Science, summa cum laude

Awards: 2023 Grace Hopper Celebration Scholarship Recipient, Pi Sigma Alpha National Political Science Honor Society

Member, Dean's List First Honors & Second Honors

**University of Stirling** - Stirling, Scotland

**September 2022 – May 2023**

Computer Science and Political Science Study Abroad Experience