

JIHYE LEE

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RESEARCH INTERESTS

Artificial Intelligence, Machine Learning, Explainable AI, Natural Language Processing, Large Language Model

EDUCATION

Boston University, Boston, MA

Expected May 2026

B.A. in Computer Science

GPA: 3.93 / 4.00

Dean's List: Spring 2024

Relevant Coursework: Artificial Intelligence, Machine Learning, Deep Learning, Algorithms, Database Systems, Software Engineering, Calculus I–III, Linear Algebra, Probability and Statistics

Temple University, Philadelphia, PA

Fall 2022 – Spring 2024

B.S in Computer Science (Transferred)

GPA: 3.90 / 4.00

Dean's List: Fall 2023, Spring 2024

EXPERIENCE

Temple University, Human–Computer Interaction Lab

Oct 2023 – May 2025

Research Intern

Philadelphia, PA

- Evaluated and compared the zero-shot Visual Question Answering (VQA) performance of trees
- Developed a dynamic image generator and trees using Python, NetworkX, and Matplotlib, enabling the creation of diverse, randomized data structure visuals
- Conducted a head-to-head comparison of GPT-4V and Gemini Pro Vision models, measuring their zero-shot accuracy in solving graph and tree data structure challenges, and visualized the competitive result with Matplotlib

Harvard Medical School, Lee Lab

Jun 2021 – Sep 2021

Data Science Intern

Boston, MA

- Engineered a robust computational workflow for scATAC-seq data analysis using R/R Studio, optimizing the process for efficiency and accuracy
- Proactively identified and resolved three critical dependency issues with R packages, ensuring seamless operation and stability of the workflow
- Visualized complex datasets from publicly available “Adult Mouse Brain” and “10X PBMC” studies, transforming raw data into insightful, interpretable visuals

PUBLICATIONS

Lee, J., MacNeil, S., et al.

“Visual Question Answering on Structured Data: Evaluating LMMs on Graph and Tree Reasoning.”

In *Proceedings of the 2024 ACM Conference on Human–Computer Interaction (STARS)*, ACM, Philadelphia, PA. DOI:

10.1145/3716640.3716654

TECHNICAL PROJECTS

Baymax Healthcare Companion

December 2025 (Expected)

- Developed a multimodal healthcare dashboard inspired by *Big Hero 6*'s Baymax, integrating symptom logging, medication reminders, and prescription OCR.
- Built an AI-powered health chatbot using GPT-4o to analyze user inputs, provide personalized suggestions, and answer health-related questions.
- Designed a clean, intuitive interface enabling users to track symptoms, manage medication adherence, and visualize health trends through interactive charts.
- Implemented backend logic to parse, classify, and summarize user health data, generating personalized insights and automated alerts.

AI Bitcoin Trader

November 2024

- Developed an automated cryptocurrency trading bot integrating the Alpaca API with GPT-4-based sentiment analysis.
- Incorporated the Fear & Greed Index and Korean YouTube transcripts to produce context-aware trading signals.
- Visualized trade data using Streamlit and Plotly; logged transactions in SQLite for performance evaluation and optimization.

COVID-19 2D Grid Spread Simulation

May 2024

- Engineered a 2D grid-based agent model in MATLAB to simulate the spread of COVID-19, focusing on the effects of varying movement speeds on transmission dynamics.
- Strategically designed agents to move randomly with subtle directional changes, modeling infection transmission through interactions within grid cells.
- Conducted 1,000 simulations with different movement speeds, analyzing the impact on virus spread by collecting data on the statuses of susceptible, infected, quarantined, and immune agents.

TEACHING & MENTORSHIP EXPERIENCE

Temple University

STEM Tutor

Jan 2023 – May 2024

Philadelphia, PA

- Tutored 100+ undergraduates in Calculus I–III, Python, Java, Data Structures, and Discrete Math.
- Provided individualized support and guided problem-solving strategies for diverse learners.

Upchieve (Nonprofit)

Volunteer Tutor

2022 – 2023

Virtual

- Tutored elementary, middle, and high-school students nationwide in math and introductory computer science.
- Delivered one-on-one virtual sessions in algebra, pre-calculus, and basic coding; over 50 volunteer hours supporting under-represented students in STEM.

Calvary Baptist Schools

Classroom Teaching Assistant (Grade 3)

2020 – 2021

Lansdale, PA

- Assisted lead teacher in math & science instruction for 3rd-grade students.
- Designed engaging activities to reinforce early STEM concepts and classroom participation.

Private Tutoring

AP Calculus Tutor

Spring 2024

Remote

- Guided several AP Calculus students, with over five earning a score of 5 on the AP exam.
- Created review sessions and mock exams to strengthen conceptual understanding and exam readiness.

TEACHING ASSISTANT & LEADERSHIP EXPERIENCE

Boston University

2024 – Present

Course Assistant, Web App Development

Boston, MA

- Assisted the instructor in facilitating class discussions, organizing review sessions, and mentoring 100+ students in React-based full-stack web development.
- Provided individualized feedback and guidance to help students grasp complex topics and improve code quality.
- Created supplementary learning materials (sample code, documentation) to enhance student understanding and engagement.
- Contributed constructive suggestions to improve course assignments and introduce modern development tools and best practices.

Association for Computing Machinery, Temple University

2023 – 2024

Finance Chair

Philadelphia, PA

- Collaborated with university departments and sponsors to raise over \$1,000 for club initiatives.

Owl Hacks Hackathon, Temple University

2023

Logistics Lead

Philadelphia, PA

- Delivered sponsor presentations and secured over \$1,500 in event funding.

TECHNICAL SKILLS

Languages: Python, Java, JavaScript, C/C++, OCaml, SQL, R, MATLAB, HTML/CSS

Frameworks & Tools: React, Streamlit, pandas, NumPy, Plotly, NetworkX, SciPy, MySQL, Jupyter Notebook, Git

Specialties: Machine Learning, Deep Learning, Data Visualization, AI-assisted Reasoning

AWARDS & RECOGNITION

Dean's List, Temple University — Spring 2023, Fall 2023

Dean's List, Boston University — Spring 2025

STARS Celebration (2024): Research paper submission, *Visual Question Answering on Structured Data*