**Inkee Jung**

(617) 888-0786 | Boston, MA | [Email Link](mailto:inkeej@bu.edu) | [LinkedIn link](https://www.linkedin.com/in/inkeej/) | [Github Link](https://github.com/InkeeJ) | [Personal Webpage](https://inkeej.github.io/)

**SUMMARY**

PhD in Mathematics with research expertise in geometry, topology, and hands-on experience in machine learning and AI applications. Proven ability to translate complex mathematical ideas into practical models, with proficiency in Python, TensorFlow, PyTorch, and statistical methods including XGBoost and Random Forest. Seeking a research-driven role in AI, data science, or machine learning where mathematical depth and model interpretability are valued.

**SKILLS & CERTIFICATIONS**

* Languages & Platforms: Python3, Github
* Python Libraries: Numpy, Pandas
* Machine Learning: Tensorflow2, Pytorch
* Quantitative: Statistics and Probability, Linear Algebra, Advanced Mathematics
* Soft Skills: Teamwork, Analytical thinking, Attention to detail, Intellectual curiosity, Research development
* Certifications: The Erdős Institute [Data Science Boot Camp](https://www.erdosinstitute.org/certificates/summer-2025/data-science-boot-camp/inkee-jung/3451064b-6d18-4109-af59-9805da640afc), Certified Investment Manager

**PUBLICATIONS**

[**A logifold structure on measure space**](https://arxiv.org/abs/2405.05492)with Siu-Cheong Lau **to appear in Axioms 2026**

[**Logifold: A geometrical foundation of ensemble machine learning**](https://ieeexplore.ieee.org/abstract/document/10796884)with Siu-Cheong Lau **ICECCME 2024**

**WORK EXPERIENCE**

**Boston University:** Boston, MA **2020 - present**

*Teaching Assistant & Lecturer*

* Lectured in problem-solving sessions and led discussions for over 400 students across 8 semesters. Subjects taught include Calculus I, II, Complex analysis, and Linear Algebra.
* Developed course materials and taught Probability course
* Served as Teaching Assistant for 7 courses including Calculus, Complex Analysis, Mathematical Statistics, and Linear Algebra

**SELECTED PROJECTS**

**Team Predicting Aviation Accident Severity -** *The Erdős Institute* [[Github Link](https://github.com/TheErdosInstitute-Summer2025-Project/aviation-project)], [[Video](https://www.erdosinstitute.org/certificates/summer-2025/data-science-boot-camp/inkee-jung/3451064b-6d18-4109-af59-9805da640afc)], [[Slides](https://www.erdosinstitute.org/_files/ugd/34b2fa_94a40f357d734131b789e30f0f905e8f.pdf)] **Summer 2025**

* Led data extraction and cleaning by converting *.mdb* files to *.csv*, integrating event, aircraft, and sub-aircraft tables into a unified dataset.
* Engineered, imputed, and prepared features for classification and regression.

Developed ensemble models (XGBoost, Random Forest, Extra Trees, Histogram Gradient Boosting) with grid search and cross-validation. Achieved F1 score of 0.459 (Extra Trees) in aircraft damage classification vs. 0.316 baseline and delivered interpretable insights into accident severity.

**Logifold implementation on Deep Neural Networks augmented by perturbed dataset   
–** *Boston University*  **Spring 2025 - present**

* Have developed a geometric framework for adversarial attacks using logifold structure; detection, making robust logifold, and improving overall performance of ensemble of neural networks.
* Generated various type of adversarial CIFAR10 images and neural network models with Tensorflow2 to test the robustness of logifold implementation and detection attack strategy with fuzzy domains.

**Persistent Laplacian on Graph Neural Network**  **Spring 2025 - present**

* Have developed a systematic machinery using Persistent Laplacian to Graph Neural Network
* Have implemented vectorized graph information using Persistent Laplacian computation.
* Have applied to Link prediction, molecule structure classification, and graph classification tasks.

**EDUCATION**

**Boston University,** *PhD Candidate of Mathematics*(GPA = X.XX) **2026**

**Yonsei University,** *Bachelor of Science in Mathematics*(GPA = 3.94/4.3) **2020   
  
Honors & Awards**

**University Students Contest of Mathematics,** *Bronze medal - Korean Mathematical Society*  **2019**