Rishi Jha

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EDUCATION

UNIVERSITY OF WASHINGTON
BS.BA., Computer Science and Mathematics - Philosophy
March 2022 | Seattle, WA
2018, 2019, 2020 Annual Dean's List
GPA: 3.80 / 4.0

THE OVERLAKE SCHOOL
Grad. June 2018 | Redmond, WA

LINKS

Website: **rishijha.com**
Email: **rjha01@cs.uw.edu**
Github: **rjha18**
LinkedIn: **rishi-jha**
Google Scholar: **Rishi Dev Jha**

COURSEWORK

PLANNED

Natural Language Processing
Cryptography
Modern Algebra I & II
Distributed Systems

COMPLETED

Machine Learning (Grad)
Machine Learning (Undergrad)
Deep Learning
Algorithms
Systems Programming
Real Analysis I & II
Probability and Statistics I, II, & III
Data Management

SKILLS

TAGS

Business Strategy • Leadership
Creative Ideation • Machine Learning
Web Design

PROGRAMMING

Python • C++ • Java / C# • PyTorch
TensorFlow • Azure DevOps • React
Redux • Express • LaTeX

SUMMARY

Passionate computer science / mathematics student, TA, and researcher. Always looking for opportunities to give back and grow. Experience in machine learning, web design, and organized small business chaos. Motivated by hard problems.

PUBLICATIONS

CONFERENCE PROCEEDINGS

[1] Rishi Jha and Kai Mihata. "On Geodesic Distances and Contextual Embedding Compression for Text Classification". In: *Proceedings of the Fifteenth Workshop on Graph-Based Methods for Natural Language Processing (TextGraphs-15)*. Mexico City, Mexico: Association for Computational Linguistics, June 2021, pp. 144–149. url: `https://www.aclweb.org/anthology/2021.textgraphs-1.15`.

RESEARCH

SECURITY AND ML | Undergrad ML Researcher

May 2021 – Present | Seattle, WA
Working with **Dr. Sewoong Oh** and **Jonathan Hayase** to:

- Create a benchmark platform and survey for robustness of machine learning models against 'backdoor' attacks, in which an attacker embeds triggers into the training data of a model.
- Generalize current approaches using robust covariance estimation to a differentially private setting.

CENTER FOR NEUROTECHNOLOGY | Undergrad ML Researcher

March 2020 – Present | Seattle, WA
Working with **Dr. Rajesh Rao** and **Dimitrios Gklezakos** to:

- Develop an audio-visual hypernetwork for representation learning and classification in which a video-controlled neural network controls the weights of an audio interpreter. Planned submission to **ICMR**.
- Create a convolutional, manifold-learning based network to learn complex features in natural images in an unsupervised fashion using sparse coding. The system learns representational similarities between features and generalizes them.

SELF-DIRECTED | NLP Researcher

November 2020 - Current | Seattle, WA
Paper accepted at **TextGraphs at NAACL**. Worked with **Kai Mihata** to:

- Investigate the downstream effects of compressing BERT embeddings using nonlinear dimensionality reduction techniques and geodesic estimations.
- Find that nonlinear compressions of the embeddings tend to work well in some data regimes, a feature that can be utilized in memory-constrained settings.

ICTD LAB | Undergrad Researcher

November 2018 - May 2019 | Seattle, WA
Worked with **Dr. Spencer Sevilla** to:

- Investigate the viability of different chat apps in poor network conditions.
- Implement a teaching solution for schoolchildren in rural Indonesia.

EXPERIENCE

UW | 3x for Undergrad / Grad Machine Learning TA

January 2021 - Present, March 2020 – June 2020 | Seattle, WA

In (Summer 2021) Will work to redesign homeworks to be more interesting, relevant, and clear. Funded by **Dr. Sewoong Oh**. Worked on following quarters:

- **(All)** Designed homeworks and section material for 150+ person classes. Held weekly office hours, monitored Piazza, and graded assignments.
- **(Spring 2021 for Undergrad / Grad)** Wrote new homework problems and supported graduate students in Office Hours and online question boards.
- **(Winter 2021 for Undergrad)** Taught and prepared materials for each section for all TAs. Led a 25-person section.
- **(Spring 2020 for Undergrad / Grad)** Supported graduate students in Office Hours and online question boards.

MICROSOFT | Software Engineering Intern - Defender Security

June 2020 - September 2020 | Remote

- Reduced related COGS by $100K - $1M by creating ML model to selectively download dangerous files for analysis. In production.
- Built infrastructure for ring-based ML model deployment. In production.
- Decreased researcher rule development time by 35%, by creating VSCode extension to natively test rules. In production.

MICROSOFT | Explore Intern - Office.com Front End

June 2019 – August 2019 | Redmond, WA

- Designed, implemented, and released front end notes tool for the Office.com team using Typescript, Redux, and React internally.

COMPETITIONS

2019	Top 4/36	UW Foster CBDC: Consulting Challenge
2017	3rd/1000+	Microsoft OneWeek Hackathon Consumer Category