



Nikita Ravi

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EDUCATION

Purdue University

August 2022 - May 2024

M.S. Computer Engineering

Purdue University

August 2018 - December 2022

B.S. Computer Engineering

COURSEWORK

Courses: Artificial Intelligence, Computer Vision, Deep Learning, Statistical Machine Learning, Natural Language Processing, Python for Data Science, Data Structures and Algorithms, Object Oriented Programming in Java, Computer and Network Security, Quantum Computing, Random Variables and Signals, Differential Equations, Linear Algebra

Awards: Dean's Honor List, Semester Honors

SKILLS

Programming Languages: Python, SQL, Apache Spark, Java, C, MATLAB, \LaTeX

Machine Learning: PyTorch, Tensorflow, Lightning, HuggingFace, Langchain, OpenCV

Tools: Git/GitHub, Unix Shell, Weights and Biases, Docker, AWS Sagemaker, SLURM

Languages: English, Japanese, Telugu

WORK EXPERIENCE

TerraPower | *Materials Engineer*

July 2024 – Current

- Developed an AI agent that would analyze the question asked, retrieve relevant data/context, and deliver context-aware responses or visualizations, streamlining information access for customers.
- Implemented automated health checks in Python using SNMP to monitor network devices, detect issues, and trigger alerts for proactive maintenance.

Salesforce | *Software Engineer Intern*

June 2023 – August 2023

- Fine-tuned an existing pre-trained causal LLM transformer for its text generation capabilities to answer any question pertaining to Salesforce's internal network health monitoring website.
- Experimented and fine-tuned different transformers like BERT, GPT2, Falcon, and Salesforce's own xgen models.
- Achieved an accuracy of 92.85%.

Salesforce | *Software Engineer Intern*

May 2022 – August 2022

- Trained a K-Means model to cluster network devices by their configurations using NLP TF-IDF computations.
- Displayed the clustering on a three-dimensional graph using a type of dimensionality reduction method called Principal Component Analysis.

Lenovo | *DevOps Engineer Intern*

June 2021 – August 2021

- Implemented a software that effectively detects and redacts customer's PII and Lenovo's confidential data using Named Entity Recognition.

Lenovo | *User and Customer Experience Co-Op*

January 2020 – August 2020

- Wrote Django-admin commands to manage and update information, and send notifications to users regarding the status of their parts in Lenovo's internal inventory tool.
- Developed an ETL script to load customer experience data into a SQL server and identify trends.
- Trained a decision-tree model to predict the probability of Lenovo's customer support case getting resolved.

RESEARCH EXPERIENCE

SERIS Lab | *Research Assistant*

August 2023 – May 2024

- Explored the reproducibility crisis and surveyed methodologies to enhance the reproducibility of training cutting-edge deep learning software
- Improved the reproducibility of training and evaluating an efficient and low-powered computer vision model known as the Tree-Based Unidirectional Neural Network (TRUNK)

Probabilistic and Understandable Machine Learning Lab | *Research Assistant*

January 2022 – May 2022

- Constructed a StarCraft II Benchmark dataset that is easily accessible and useable for ML projects
- Trained the ResNet-18 Network to predict the number of casualties from a specific frame of the game

PUBLICATIONS

[In Progress] **N. Ravi**, A. Goel, J. C. Davis, G. K. Thiruvathukal, “Improving the Reproducibility of Deep Learning Software: A Case Study Analysis”

A. Goel, C. Tung, N. Eliopolous, **N. Ravi**, N. Synovic, I. Ahlgren, J. West, G. K. Thiravathukal, J. C. Davis, Y.-H. Lu, “Advancing Low-Power Computer Vision at the Edge”, [Link]

B. Chou, P. Jajal, N. J. Eliopoulos, T. Nadolsky, C.-Y. Yang, **N. Ravi**, J. C. Davis, K. Y.-J. Yun, Y. Lu, “A Musician’s Muse: Detecting Performance Errors with Transformers”, AAAI Submission, [Link]

CERTIFICATIONS

Google Generative AI Certification

June 2023

- Covered LLMs, Attention Mechanisms, Intro to BERT

IBM Data Science Professional Certification

August 2019

- Covered Database and SQL, Data Analysis, and Machine Learning

JLPT N2 Certification

February 2016

- Japanese Government issued 2nd Highest Level Language Proficiency Exam