MILAD KHADEMI NORI, PHD

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SUMMARY

Highly analytical and results-driven data scientist with a strong statistical analysis, machine learning, and data visualization background. Seeking a challenging position in data science to leverage my skills and contribute to data-driven decision-making.

TECHNICAL SKILLS

Data Analysis: Proficient in data cleaning, exploratory data analysis, and feature engineering techniques
Machine Learning: Experience in developing supervised and unsupervised machine learning models
Programming: Proficient in Python and SQL, and in libraries such as PyTorch, TensorFlow, Pandas, and NumPy
Data Visualization: Skilled in creating visually appealing and informative visualizations using tools like Matplotlib
Statistical Analysis: Statistical techniques such as Hypothesis testing, regression analysis, and experimental design
Big Data Technologies: Familiarity with distributed computing frameworks like Hadoop and Spark
Linux: Proficient in Linux operating systems and adeptly navigating terminal commands and troubleshooting
Text Processing: Skilled in both LaTeX and Microsoft Word, crafting and formatting documents
Presentation: Experienced in PowerPoint, creating appealing presentations that convey complex information

EXPERIENCE

Queen's University, Innovation Park, Kingston, ON, Canada: Exploratory Data Analysis   Jan 2023 – Apr 2023

- Conducted exploratory data analysis to gain insights and identify cancer in prostate datasets
- Worked with a variety of data modalities (CT scans and mass-spectrometry) from medical instruments
- Implemented comprehensive data preprocessing and data cleaning techniques to prepare the medical data
- Dealt with 3D data from medical instruments (volumes made up of voxels instead of pictures made up of pixels)
- Designed techniques for landmark registration for medical data
- Authored four technical reports (besides the codes) for the projects

Queen's University, Ingenuity Lab , Kingston, ON, Canada: Vice-President   Sep 2019 – Sep 2023

- Served as the speaker, vice-president, and public relations chair of Ingenuity Lab
- Gave regular speeches about the broader impacts of Artificial Intelligence
- Talking about the opportunities ahead presented by Artificial Intelligence
- Mentoring enthusiastic undergrads guiding them to grow awareness about Artificial Intelligence

Queen's University, ECE Dep., Kingston, ON, Canada: Instructor (and Teacher Assistant) Sep 2019 – Sep 2023

- Taught 110 undergraduate engineering students per week in MATLAB programming and math coursework
- Taught 90 undergraduate engineering students in Python programming about Discrete Signal Processing

Huawei Technology, Ottawa, Kanata, ON, Canada: Research Assistance   August 2019 – November 2023

- Conducted research on non-IID Deep Learning with unusual data distribution
- Studied the issue of communication burden and non-IID data distribution in Federated Learning
- Done research on Continual Learning to overcome issues of Catastrophic Forgetting and Task Confusion
- Held regular meetings every six months to present the results in person
- Authored five technical papers (besides the codes) for the projects in top-tier journals

Huawei Technology, Jordan Street, Tehran, Iran: Network Specialist   Jan 2017 – Apr 2019

- Initialization and maintenance of network equipments in buildings and offices
- Worked with switches and routers
- Received the well-respected Huawei Certified Network Associate (HCNA)
- Held network classes for students at the Huawei center

EDUCATION

PhD, Non-IID Deep Learning Across Space and Time (Professor Il-Min Kim)   Graduating November 2023
Queen's University, Kingston, ON, Canada   3.9 GPA
Proposing a General Framework for Non-IID Deep Learning: Federated Learning and Continual Learning
Relevant coursework: Medical Image Processing with Deep Learning and Machine Vision

MSc, Energy Harvesting Wireless Sensor Networks (Professor Saeed Sharifian)   Graduating July 2019
Amirkabir University of Technology, Tehran, Iran   3.8 GPA
Designing an Energy Efficient Protocol for Energy Harvesting Wireless Sensor Networks in the Internet of Things
Relevant coursework: Neural Networks and Machine Learning

BSc, Digital Electronic Systems (Professor Naser Eskandarian)   Graduating June 2016
Semnan University, Semnan, Iran   3.7 GPA
Designing and Implementing a Quadcopter Controlled by Bluetooth in Cooperation with a Group of Engineers
Relevant coursework: Electronics (1, 2, and 3) and Electrical Circuits (1 and 2)

ACADEMIC PROJECTS

Incremental Federated Learning   Winter 2022 – Fall 2023
Conducted three researchers in undertaking the holistic problem of Non-IID Deep Learning
  - Developed an original mathematical framework to gain insight into holistic Non-IID Deep Learning
  - Proposed schemes for Incremental Federated Learning that are immune to the issue of Loss Neglect
  - Written a technical paper and submitted it to IEEE TNNLS

Task-Free Incremental Learning via Mixture of Batchnoise Autoencoders   Spring 2022 – Winter 2022
Led a team of three to propose a radical scheme for task-free Incremental Learning
  - Laid out the foundation of task-free Incremental Learning via a mathematical framework
  - Proposed a scheme that achieves state-of-the-art results (submitted to IEEE TAI)

Class-Incremental Learning: A Mathematical Framework   Fall 2021 – Fall 2022
Worked with three researchers to resolve a pressing problem of Class-Incremental Learning
  - Proposed a mathematical framework to understand the problems of Class-Incremental Learning
  - Presented novel theoretical results clarifying sophisticated aspects of Class-Incremental Learning
  - Provided substantial evidence indicating the descriptive and prescriptive power of our theoretical results
  - This paper is submitted to IEEE TNNLS and is under review

On The Effectiveness of Activation Noise in Both Training and Inference   Summer 2020 – Fall 2021
Teamed up with three researchers to study the impact of noise in training and inference
  - Found remarkable results on the role of noise in generative modeling-based classifier
  - Our results indicate that noise can boost the performance up to 3 times (submitted to IEEE TNNLS)

Fast Federated Learning by Balancing Communication Trade-Offs   Fall 2019 – Fall 2020
Collaborated in a team of three to formulate and propose a new Federated Learning scheme
  - Proposed a new mathematical framework to consolidate local update and compression in Federated Learning
  - Wrote the code as well as the paper, and also, performed the derivations of the paper
  - Our paper received 40 citations from prestigious venues including Nature and IEEE Transactions

EDMARA2: A hierarchical routing protocol for EH-WSNs   Fall 2018 – Fall 2019
Worked on the routing problem of Energy-Harvesting Wireless Sensor Networks
  - Proposed a mathematical framework to understand the problems of Continual Learning
  - Proposed schemes for class-incremental learning and task-free learning