Abenezer **Girma**

MACHINE LEARNING SOFTWARE ENGINEER | DATA SCIENTIST | COMPUTER VISION ·

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Summary

- In depth expertise & hands-on experience in deep learning (DL) and statistical machine learning (ML) with GPU/CUDA enabled servers.

- Strong Python skill, experience in various machine learning tools (Scikit-learn, Tensorflow, Pytorch, Keras), worked on AWS and IBM cloud.

- Ability to understand team needs and develop ideas to meet their objectives, thinks through projects from ideas through production.

Work Experience

National Institute of Aerospace | NCAT
Hampton, VA, USA

MACHINE LEARNING GRADUATE RESEARCHER — *May. 2019 - Present*

- Developed a novel convolutional neural network (CNN) architecture for computer vision tasks and implemented the design in python using Pytorch framework. Improved CNN's performance by up-to 3%, submitted the findings to be published in a conference paper.
- Extracted information from vehicular sensor data using a deep learning LSTM model with attention mechanism implemented in python Keras to estimate driver's intention ahead of time. Improved baseline accuracy by 14%, published the result in a conference paper.
- Conducted large scale deep learning parallel training by exploiting distributed GPU clusters, reduced training time by half.

Autonomous Control and Information Technology Institute | NCAT
Greensboro, NC, USA

GRADUATE RESEARCH ASSISTANT — *Aug. 2017 - May. 2019*

- Implemented a deep learning model (LSTM) in python using Keras with TensorFlow to extract drivers' behavior from sensory data and predict their identity (owner/not-owner). Enhanced the accuracy by up to 25% accuracy, published the work in a conference proceeding.
- Developed Internet-of-things (IoT) devices & integrated them with drones to collect disaster areas data and forward it to the IBM cloud.
- Worked on developing novel streaming data clustering algorithm to find patterns in unlabeled data, improved the accuracy by up to 12%.
- Worked on developing unsupervised feature selection algorithm using density-based clustering, improved the accuracy by up to 7%.

Total S.C
Addis Ababa, Eth

DIGITAL COMMUNICATION OFFICER | YOUNG GRADUATE PROGRAM — *Jun. 2016 - Jul. 2017*

- Helped customers to easily understand the digital tools offered by the company via training, workshops and one-on-one session.
- Prepared user guides for digital tools and platforms used in the company and accelerated the productivity of the employees.

Addis Ababa University
Addis Ababa Eth.

SOFTWARE DEFINED NETWORKING | INTERNSHIP — *Jan. 2015 - Jun. 2015*

- Implemented Software Defined Networking (SDN) model technology for Addis Ababa university network topology.
- Successfully finished the project and delivered results to be adopted by Information Network Security Agency (INSA) company.

Education

North Carolina A&T State University (#1 STEM HBCU-University in the USA.)
Aug. 2017 - Dec. 2021

PH.D. IN ELECTRICAL AND COMPUTER ENGINEERING — *CGPA: 3.97/4.0*

Addis Ababa University
Sep. 2011 - Jul. 2016

B.S. IN ELECTRICAL AND ELECTRONICS ENGINEERING — *CGPA: 3.73/4.0*

Skills

Programming Language.   **Python**, R, C++, SQL, Unix, Linux, MATLAB, NetLogo.

Machine learning & AI tools   **Pytorch**, **TensorFlow**, **Keras**, **scikit-learn**, scipy, OpenCV, Pandas, Numpy, Matplotlib, Seaborn, AWS , github.

Projects

- Led a team of 5 PhD students in developing a connected autonomous drones for search and rescue operation. Was responsible for assigning tasks to the members, following up the progress, leading meetings and delivering the project on time.

- Worked on Testing, Evaluation, and Control of Heterogeneous Large Scale systems of Autonomous Vehicles project, funded by Air Force Research Laboratory. Collaborated with more than 20 researchers in conducting research and preparing report on quarterly basis.

Achievements

- Winner of NASA Langley research center and National Institute of Aerospace PhD fellowship award.

- First place winner of Paris 2015 Climate hackathon competition, proposed a climate-friendly startup project plan.

- Published five academic papers (four Conferences and two Journals) in the area of machine learning and AI.

Activities

- Founder and president of the Ethiopian student association and graduate representative of the College of Engineering at NCAT university.

- Volunteered in tutoring highshcool students affected by COVID19 school closer and helped them to graduate on time.