**Jaya Krishna Mandivarapu**
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**#4th Year Ph.D. Student in Deep Learning #Past Master's in Data Science & Analytics**

## Research Experience

My research goal is to solve real world computer vision problems in the field of Deep learning (Continual Learning, Active Learning, Few-shot Meta-Learning). My goal is to achieve general artificial intelligence in agents with features like continual learning, active learning, cross domain few-shot learning both in the Computer Vision and NLP domains. Such that can agent learn continually over an indefinite period of time without forgetting old knowledge, by getting smatter by utilizing the accumulated knowledge, learning from fewer data and achieving generalization across the domains. To achieve this continual/ life-long learning type of a scenario, I am trying to solve catastrophic forgetting in neural nets and demonstrate experiments on domain like computer vision, NLP (Natural Language Processing) both in semi, self-supervised learning.

## Publications

- **Deep Active Learning via Open set recognition.** (Under Review to ICLR conference)
- **Continual Learning with Deep Artificial Neurons** (Submitted to Neurips conference)
- **Cross Domain Few Shot learning for Document Intelligence using Canonical Correlation** (Under Review to IAAI)
- **Efficient Document Image Classification Using Region-Based Graph Neural Networks.** (Published at KDD-W).
- **Self-GCL: Continual Learning using Graph Neural Networks** (In-Progress)
- **A Scalable Approach to Multi-Context Continual Learning via Lifelong Skill Encoding** (Published at Frontiers in AI)
- "**A Cross-Platform System Architecture for Form Design and Data Analytics for Public Health**" at "ACM International Conference on Bioinformatics, Computational Biology, and Health Informatics."
- "**A new cross-platform architecture for epi-info software suite**" at "BMC Bioinformatics"

## Education

**Georgia State University,** Computer Science, Atlanta, GA **Jan 2018 – Aug 2022**
**Ph.D. in Computer Science for General Artificial Intelligence (Deep Learning, Continual Learning, Active Learning)**
Advisor: Dr. Ronaldo Estrada; Ph.D. in Cognitive Neuroscience from Duke University

**Georgia State University,** J. Mack Robinson College of Business, Atlanta, GA **Aug 2016-Dec 2017**
**Master of Science in Data Science and Analytics.**

**Gudlavalleru Engineering College**, AndraPradesh, India **April 2013**
**Electrical and Electronics Engineering.**

## Professional Experience

**American Family Insurance – Research Team (https://www.ai-ml-amfam.com/)** **May 2021– Aug 2021**
***Machine Learning Research Intern:***

- Developed a solution for few-shot document image classification under domain shift at enterprise level application.
- Developed few shot classification pipeline at enterprise level for learning any new classification task with few labeled samples.

**American Family Insurance – Research Team (https://www.ai-ml-amfam.com/)** **May 2020– Aug 2020**
***Machine Learning Research Intern:***

- Developed an end to end pipeline of document classification model using region-based graph neural networks which can be trained easily with less computational expense, this translated to big cost advantages of hosting and deployment in enterprise level and can be applied to large no of real-world scenarios.
- Developed method is a scalable and efficient automation that is more intelligent than the brittle OCR-template based method which can support a wide range of business workflows with millions of business document images

**Cox Automotive** **May 2017– Aug 2017**
***Machine Learning Intern:***

- Created predictive model and recommendation system using historical and current data to improve current satisfaction levels of dealers and predict the no of new customers(Dealers) that will join the Coxautotrader and Identified individuals who would be positively influenced by ads, mailings, phone calls and other efforts to join the cox automotive dealership.

- Created a matrix of demographic data of all dealers to develop a set of predictive models that applied a score to every dealer. Applied statistical techniques to create and/or update predictive models for use in, pricing, strategy etc for the dealers.

**Center for Disease Control & Prevention (CDC)** **Aug 2016 – May 2017**

***Research Assistant ( http://epi.cs.gsu.edu/ )***

- Build a cross platform application for **Center for Disease Control and Prevention** (CDC) for collection and sharing of data regarding the Ebola and zika virus, others among different healthcare companies.
- Made significant modifications to current data collection app which improved the accuracy of data collected significantly.
- Built Deep Learning Algorithms in python which classifies and predicts the disease infected to the patient by monitoring the patient's wound images and visualized the results to CDC using Tableau.

**Cognizant Technology Solutions** **Jan 2014 – Aug 2016**

- Identified and managed fraudulent transactions as part of the fraud analytics team and taken the measures to block the accounts from transacting to prevent losses and measured the performance is measured by using account-level metrics.
- Build the entire framework for the fraud detection in realtime to achieve better results.
- Developed sentimental analysis model which helped the client Voya Insurance in successful rebranding process from I&G Inc.

## Professional Review Experience

- Acted as a reviewer for **Neurips-W Meta-learning** Conference.
- Acted as a reviewer for **ICLR** Conference.
- Acted as a reviewer for **AISTATS** Conference.

## Grants

- Received Continual Learning grant from **GoodAI**.
- Part of NSF-Grant for Continual Learning through diffusion based systems

## Teaching Experience

- Adjunct Professor for "**Machine Learning**" [Fall-2021] at Georgia State University.
- Adjunct Professor for "**Data Mining**" [Fall-2020, Fall-2019] at Georgia State University.
- Adjunct Professor for "**Principles of Computer Science**" [Spring-2019] at Georgia State University

## Computing Expertise

***Data Packages & Languages****:* Python, R, JAVA, Apache Spark and Solar.
***Machine Learning Frameworks****:* Tensorflow, Pytorch
**Gaming Engines**: Unreal Engine
***Machine Learning Algorithms*****:** Linear Regression, Logistic Regression, SVM, Naive Bayes, Random Forest, NLP (Spacy and genism), Predictive Analytics, Recommendation Engine
***Deep Learning****: Computer Vision (*Convolution Neural Networks (CNN), Reinforcement Learning), NLP(BERT)
***Cloud Technologies:*** AWS, Microsoft Azure, Microsoft Azure Machine Learning, Microsoft Azure Analytics.
***Databases and Visualization****:* SQL, MySQL, Neo4j, MongoDB, MS Access, Tableau.
***Other & Web Development****:* WinSCP**,** Putty**,** React JS, Node.js.

## Leadership Activities

**Vice President, IEEE Georgia State University** **Aug 2019 - Current**

As vice president, I was one of the responsible for the overall performance of the IEEE Student chapter. Presided all technical, budget and alumni committee meetings. I have conducted many seminars in which as an IEEE team invited people working in various industries to speak and give knowledge about their work and the latest technologies and platforms in their industry.

**International Student Leader (Global Student Mentors)** **May 2019 – Aug 2019**

As an International Student Leader at International Student & Scholar Services (ISSS) engaged with around 650 international, transfer and change of level students to help them navigate academic and social life in Atlanta. Offered social, educational and residential support through – international orientation, peer mentoring, conducting workshops, information sessions, university & city tours.