Afsaneh Shams

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Objective:

As a Computer Science PhD student specializing in AI and deep learning, my dissertation focuses on hybrid evolutionary CNN with attention mechanism. I have studied light weight evolutionary CNNs, EATFormer too. I am looking for a full-time internship to apply my academic and self-taught knowledge to other industrial applications and projects.

Education:

Ph.D. in Computer Science Aug. 2020-Present
University of Georgia, Athens, GA, USA, GPA: 3.77

M.Sc. in Electrical-Telecommunication Engineering Sep. 2012-March 2016
Shiraz University, Shiraz, Iran, GPA: 3.43

B.Sc. in Electrical-Telecommunication Engineering Sep. 2007-Sep. 2011
Shiraz University, Shiraz, Iran, GPA: 3.45

Work Experience:

Research and Development Team Member, SSRL, University of Georgia, Athens, GA, USA Dec. 2023-Present
Doing research on evolutionary deep learning methods for Small Satellite Research Laboratory.

Teaching Assistant, University of Georgia, Athens, GA, USA Aug. 2020-Present
Numerical Simulations in Sci. & Eng., Found. for Informatics, Data Analytics, Discrete Math.

Design Electrical Engineer, PIDEC, Shiraz, Iran June 2012-March 2018
Experience of working in more than 10 projects in the fields: Electrical Heat Tracing Sys., Lighting Sys., Communication Syst., CCTV.

Projects:

- Developed an evolutionary CNN based model achieving 99.58%, 99.32%, and 92.58% classification accuracy on EMNIST_Digits, MNIST, and Fashion_MNIST datasets, respectively, by optimizing network efficiency.
- Implementing an efficient evolved neural network to determine optimal numbers of hidden layers and units to enhance image classification accuracy on benchmark datasets.
- Fake image region detection & description in deepfake images, in this project the effectiveness of YOLOv3 for object detection of PSCC-Net samples was studied & the fake objects were marked by mask or bounding box.
- COVID-GAN: supervised vs semi-supervised, we studied the effect of Generative Adversarial Networks (GANs) to classify COVID-19 from chest X-rays, enhancing detection by training with a mix of unannotated and normal images.
- Conducted ML analysis in WEKA for RNA structure prediction (94.01% accuracy) and EEG dataset classification. Used methods like Random Forest, Naïve Bayes, KNN, and Neural Networks.
- Project Management Tool (link) and Cinema Ticketing Website(link): Developed PostgreSQL, MySQL and PhpMyAdmin for database management.
- A Synchronous Collaborative Programming tool to create a platform for Live coding for the sake of cooperative learning with proper collaboration (link).

Skills:

- Programming Language: Python, Java, Matlab, C
- Database Management: PostgreSQL, MySQL, phpMyAdmin, Neo4j
- Machine Learning & Data Science: PyTorch, TensorFlow
- Analyzer & Design Tools: Figma, WEKA, StarUML, VHDL, Pspice
- Personality: Independent, team player, self-motivated, hardworking, quick learner, strong communicator.

Academic Accomplishements :

- **Publications:** - "Evolving Efficient CNN Based Model for Image Classification", Accepted at CSCE 2023, (Paper ID: ICA4142). To be presented at the 25th International Conference on Artificial Intelligence (ICAI'23), Las Vegas, USA. IEEE Computer Society Conference Publishing Services (CPS).
  - "Evolutionary CNN-Based Architectures with Attention Mechanisms for Enhanced Image Classification", In Artificial Intelligence, Machine Learning, Convolutional Neural Networks, and Large Language Models. De Gruyter, part of the "Intelligent Computing" series. ISBN: 978-11-14400-3. Expected publication date: Early 2024.
  - "A Survey of Evolutionary Algorithm Applications in Auto Machine Learning", (In progress)
- **Award:** Outstanding Graduate TA Award, Issued by University of Georgia, May 2023.
- **Volunteer:** - Georgia Science & Engineering Fair (GSEF) 2023, Judge, Mar. 2023.
  - Georgia Science & Engineering Fair (GSEF) 2024, Judge, Apr. 2024.