Eashan Adhikarla

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OBJECTIVE

To acquire a challenging summer research position utilizing my skills in Machine Learning, Data Science, Knowledge Discovery and Information Retrieval.

EDUCATION

Lehigh University, GPA - 3.6*/4.0 **Bethlehem, PA**
Ph.D. in Computer Science (Machine Learning) Aug 2020 - Present

Lehigh University, GPA - 3.6/4.0 **Bethlehem, PA**
M.S. in Computer Science Aug 2018 - May 2020

Rajiv Gandhi Proudyogiki Vishwavidyalaya (RGPV), GPA - 3.7/4.0 **Bhopal, MP**
B.E. in Computer Science Aug 2013 - May 2017

EXPERIENCE

National Science Foundation **Bethlehem, PA**
Peer Mentor, (Supervisor: Dr. Brian D. Davison) May 2020 - Aug 2020
- Mentoring and closely guiding 15 NSF-REU Interns on-site project.
- CNS-1757787 - Award

Resilience Research Group for SARS-CoV-2 **Bethlehem, PA**
Research Assistant, (Supervisor: Dr. Brian D. Davison) May 2020 - Aug 2020
- Image Gathering for face masks in the United States and designing a novel face-mask detection algorithm for a data science survey research on SARS-CoV-2.
- NSF Award 1841338 - Cultural-Perceptions-of-Risk-Behavioral-Responses

Lawrence Berkeley National Laboratory (LBNL) **Berkeley, CA**
Research Intern (NERSC), (Supervisor: Dr. Brian Austin) May 2019 - Aug 2019
- Developed scripts to fetch and analyze terabytes of data from the SLURM scheduler.
- Analyzed & estimated real-time queues in the scheduler for optimizing the policies for incoming jobs.
- Developed three real-time policies that potentially improved the allocation procedure.

Persistent Systems **Pune, MH**
Machine learning Intern — Software Engineering May 2019 - Aug 2019
- Developed a facial recognition and verification system using Google's FaceNET research as the baseline which can directly learn from the 128x128 low dimensional representation.
- Added additional OpenCV features on top of it, which can differentiate between 3-D and 2-D images (a drawback of Google's FaceNET)
- Designed a purely browser-based RSA compliant module to work with FIDO keys.

RESEARCH PROJECTS

Auto-encoder with Memory Defense for White-box Adversarial Attacks   Aug 2020
- Developed a facial recognition and verification system using Google's FaceNET research as the baseline which can directly learn from the 128x128 low dimensional representation.
- Added additional OpenCV features on top of it, which can differentiate between 3-D and 2-D images (a drawback of Google's FaceNET)
- Designed a purely browser-based RSA compliant module to work with FIDO keys.

Sequence Generative Adversarial Nets with Policy Gradient   Jan 2020
- Seq-GAN is a unique approach which models the data generator as a stochastic policy in reinforcement learning to solve the problem with improvements in pre-processing.
- The RL reward signal comes from the GAN discriminator judged on a complete sequence, and is passed back to the intermediate state-action steps using Monte Carlo search.

Facial Recognition and Verification System   Jan 2017
- Working with the accuracies and flaw removal strategies with re-implementation of Open-Face, for improving the range of applications in the domain of Security.
- Resolved the false positive 2-D inputs by introducing more features in Stage 1 (face detection) as a.) Orientation Normalization b.) 3D surface representation.

PUBLICATIONS

- Autoencoder with Memory Defense against White-box Adversarial Attacks*, *In progress for International Conference on Machine Learning (ICML), 2021*
- Estimating an HPC Facility's Capacity For Accommodating Real-time Workflows, Thesis, *National Energy Research Scientific Computing (NERSC), 2019*

PEER REVIEW

- IEEE Big Data Conference   Fall 2020

SKILLS

Programming Languages   -   C++, Python, Bash, Scala
Web Backend Technologies   -   MySql, MongoDB, NoSQL, HTML5.
Web Frontend Technologies -   Pytorch, Tensorflow, OpenCV, dlib, Boost-C++, Cmake, scikit-learn, Apache Spark, git, Latex

TEACHING

- CSE 017 - Programming and Data Structures   Fall 2020
- CSE 017 - Programming and Data Structures   Fall 2019
- CSE 160 - Introduction to Data Science   Spring 2019
- CSE 001 - Breadth of Computing   Fall 2018