

Mohammad Shahidzade

B.Sc. student in Computer Engineering

+98-914-032-6884

mohammadshahidzade@yahoo.com

mohammad-shahidzade

Education

- 2018–2023 **B.Sc. in Computer Engineering**, Shahid Bahonar University of Kerman, Iran, GPA 3.99/4.0.
- 2011–2018 **Diploma In Mathematics and Physics**, Allameh Helli High School Kerman, Iran.
Affiliated with the National Organization for the Development of Exceptional Talents (NODET)

Research Interests

- Deep learning on real-world applications, computer vision, NN optimization

Honors & Awards

- 2020 **First Place**, CAD Contest at ICCAD.
Winner team of problem C: GPU Accelerated Logic Re-simulation.
- 2018/19 **Bronze Medal**, ACM-ICPC Asia Tehran Regional Contest.
Rank 4 in The 2018 ICPC Asia Tehran Regional Contest. Rank 1 in Asia Tehran Internet Online Programming Contest.
- 2018–2021 **Top 3 GPA rank**, Shahid Bahonar University.
Among 120 computer engineering students.
- 2017 **Top 100**, Computer Olympiad.
among 10000 students ,passed first and second exam

Papers

- Mohammad Shahidzade**, Seyed Mani Sadati , Behnam Ghavami, Zhenman Fang, and Lesley Shannon. BDFA: A Blind Data Bit-flip Attack on Deep Neural Networks.

Research Collaborations

- Reconfigurable Computing LAB, Simon Fraser University**, BC, Canada Collaboration on reliability and security of Deep Learning models against fault injection and bit-flip attacks

Related Courses

- Algorithm Design: 20/20
- Computational Intelligence: 19.75/20
- Probabilistic and statistic: 20/20
- Natural Language Processing: 20/20
- Artificial Intelligence: 18/20
- Automated Design of Digital Circuits: 19/20

Research Experiences

2021 **Research assistant**, Shahid Bahonar University of Kerman.
Reliable Embedded System Design Laboratory

Supervisor, Professor Behnam Ghavami.

Description, I contributed to 4 projects related to Deep Learning, efficient and low-cost Deep learning systems, Safety and reliability of DNNs, and logic simulations..

selected projects

- **GPU Accelerated Logic re-simulation**

In this project, I first wrote a compiler to convert the Verilog netlist to C++ functions. Then I developed several methods to parallelize the computations in the two dimensions of gateparallelism and stimulus-parallelism; I used CUDA to program this part.

- **Fault injection on Deep learning models**

In this project, I trained 3 neural networks, Vgg, Resnet, mobile net on CIFAR10 and CIFAR100 datasets. I also developed a tool based on PyTorch to determine the accuracy of this network under fault. I trained and developed an autonomous driving steering angle on the PyTorch framework.

- **Blind Data-Free Attack**

In this project, I learned about row hammer attacks and how we can attack a neural network by changing a small amount of the bits. I also learned about the importance of data and developed a new method to attack NN without having access to any training/test data.

- **Full Facial Recognition System**

In this project, I developed full facial recognition and understood the challenges. This project helped me to understand the importance of loss function and how we can do one-shot learning in neural networks.

Other Experiences

2019 **Scientific Committee**, Saba Programming Contest.

An onsite and online programming contest. I was the problem designer of this contest. The Online contest was held at HackerEarth.

Skills

- **Programming Languages:**
C/C++, Python, C#, Octave(MATLAB), CUDA
- **Machine Learning**
Tensorflow, Pytorch, Keras
- **HDL**
VHDL, Verilog

Languages

- Persian : Native
- English: Fluent

References

- **Associate Professor Behnam Ghavam**
Department of Computer Engineering
Shahid Bahr University of Kerman
ghavamibehnam@gmail.com / ghavami@uk.ac.ir