Atharva Nimbalkar

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IIIT Nagpur
Computer Science and Engineering
4th Year Undergraduate
CGPA: 8.67/10.0

INTERESTS

Data Structures, Algorithms, Deep Learning, Cryptography, Pentesting, CUDA

- Proficient in Data Structures, algorithms and their application. I've implemented parallelized versions of popular encryption and hashing algorithms such as AES and MD5. These were parallelized using GPUs and CUDA programming in C++. Giving an unmatched improvement over serial CPU implementations.
- Inquisitive about IPSec and Pentesting. Participate regularly in information security competitions such as Capture The Flag on platforms such as hackthebox.
- Worked on application of Deep Learning to effectively interact with an environment. Created small scale projects such as bots that achieved super-human level performance in simple games.
- Active and regular participation in competitive coding activities. Including but not limited to online platforms like CodeForces, CodeChef etc. Using C++ or Python.
- Source code for all of my projects is available on my GitHub profile.

INTERNSHIPS

1. **Blockchain research intern at MIR Labs, Gwalior.**
   May 2019 – July 2019. A research internship on using Blockchain to improve the Internet of Things.
2. **Stride.ai - Banglore**
   May 2020 – Present. Working as a software development intern featuring projects based on Natural Language Processing, Web Scraping and Data Mining.

Publications

[1] **On the Role of Blockchain Technology in Internet of Things**
Atharva Nimbalkar, R. S. Bhadoria, Neetesh Saxena
Contributed as a book chapter in "Advanced Applications of Blockchain Technology"
by Springer.
https://doi.org/10.1007/978-981-13-8775-3_6

[2] **The impact of Smart-Grid on the society and how Blockchain facilitates energy trading.**
Atharva Nimbalkar, R. S. Bhadoria
To be published as an article in IEEE Magazine.
(In Press)

[3] **Application of Parametric Rectified Linear Unit (PReLU) into Speech Recognition Model**
Atharva Nimbalkar, Ram Korde, Robin Singh Bhadoria, Munish Khanna
Was presented as a research paper in INFOTECH Serbia 2020.
http://www.infotech.org.rs/en/index.html

Project Details

- **Wrote a C++ library that uses GPUs and CUDA programming to implement encryption and hashing algorithms.**
  Used CUDA to parallelize algorithms such as AES and SHA in C++.

- **Wrote a python application to extract the names of Board of Directors from an Annual Report of a company.**
  This was an NLP project to extract the names of Board of Directors from a 10K document of a company.

- **Implemented a Blockchain based peer to peer energy trading system for a smartgrid.**
  Designed a system to allow houses connected in a microgrid to sell their excess solar energy. The project was Pitched at Startup Weekend, Pune 2019.

- **AI-2048**
  AI-2048 is my own version of the popular android game titled ‘2048’. It was built from scratch using PyGame library in Python. A Deep Q Network was implemented and trained using reinforcement learning to play this game efficiently. Source can be found on my GitHub

- **Built A Gesture Controlled Quadcopter using arduino and OpenCV.**
  It consists of a Arduino microcontroller on the the Quadcopter frame that controls the 4 propellers. The arduino interacts with the computer through ‘Firmata’ protocol over Bluetooth. The computer also runs OpenCV to record simple hand gestures that control basic movement of the quadcopter.

- **Repostinator**
  Repostinator is program built using Python and Shell scripts that automates posting content on Instagram. A web scraper pulls images from Reddit, and they are uploaded to Instagram with automatically generated captions. Can be used for automated social media marketing.

- **Used p-threads to parallelize standard sequential algorithms.**
  Using functionalities provided by the Linux operating system such as pthreads and semaphore library for GCC, some standard sequential algorithms like sorting and fibonacci series were parallelized.

TECHNICAL SKILLS

Programming languages: Proficient in C++, Python, Arduino, and CUDA Programming, Shell Scripts
Libraries: Tensorflow 2.1, Selenium, PyQt, STL(C++), CUDA (C++)