ANANDHARAJU DURAI RAJU (ANAND)

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SUMMARY

An impactful applied researcher enabling AI innovations for real-world challenges.
A deep learning optimization enthusiast and Sustainable AI advocate.

EDUCATION

Ph.D., School of Computing Science, Simon Fraser University, Burnaby **Jan 2019 – Jan 2025 ETA**

KEY PUBLICATIONS (as First Author)

- Low Carbon Footprint Training for 1D-CNNs with Temporal Max-Pooling [PDF] ACM CIKM 2024
- LockBoost: Detecting Malware Binaries by Locking False Alarms [PDF] IJCNN 2022
- A survey on cross-architectural IoT malware threat hunting [PDF] IEEE Access 2021

RESEARCH EXPERIENCE

Research Assistant, Simon Fraser University | **Canada** | **Data Mining** (Prof. Ke Wang) **Jan 2019 – Present**

- Successfully adopted "Sustainable AI" to the malware detection problem in Cybersecurity for training CNNs over extremely large sequence inputs (>250 million timesteps).
- Enabled CNN training with 22-times less GPU memory, half the training time and up to 7-times less carbon footprint than existing approaches, all without sacrificing model performance.
- Surpassed SOTA performance by 2-9% in public malware datasets using a novel boosting method – 'LockBoost'.
- Enabled training hybrid techniques such as CNN-Transformers using low GPU resources.
- Carried out teaching assistantship thrice for SFU data mining course and assisted 200+ students.

INTERNSHIP EXPERIENCE

Research Intern, Huawei Canada | **Canada** | **Data Privacy & Protection Tech. Lab** **Jan 2021 – Dec 2021**

- Successfully published the first-ever survey paper on cross-architectural IoT malware threat hunting.
- Deployed a deep learning-based malware detection solution as a Docker release.
- Delivered a compact and top-performing neural network with 97% accuracy based on handcrafted LIEF features.
- Delivered opcode-based advanced assembly learning method for hunting cross-architectural IoT ELF malware.
- Provided regular team-wide presentations on my literature review findings, gaps and potential novel research ideas.

PROFESSIONAL EXPERIENCE

Technology Lead, Infosys Limited | **India** | **AI & Automation Services** **Sep 2011 – Dec 2018**

- Feature Team Lead (Onsite + Offshore) for a team of 14 resources for data provisioning and order visibility project.
- Driven the agile-based project development for UI, API and Spark modules to process real-time event data.
- Provided robust and reliable 24x7 on-call production support and co-ordinated incident triage meetings.
- Won client's **"AWARD OF EXCELLENCE"** in 2015 and 2016 for tackling high priority incidents and change requests.
- Initiated automations with business value such as developing SSH and JSch-based tool to monitor the status of InfoVista components deployed in hundreds of servers, reducing 47 person-hours/month of manual work.

SKILLS

- **Languages / Databases:** Python, Apache Spark, Java, JSP, Springboot, Bash, Postgres, HBase, Oracle, DB2
- **Libraries:** PyTorch, Tensorflow, Keras, HuggingFace, REST
- **Parallelization Libraries:** Python (multiprocessing), Dask (Pandas), MPI (C++)
- **AI / ML Platforms:** Google Colab, AWS, Microsoft Azure, IBM Watson, Infosys NIA
- **Tools/Packages:** Docker, Postman, Logstash, Kafka, Grafana, Kibana, SLURM, Git, Jupyter, JIRA, Confluence
- **Training:** IBM Watson V3 2018, Azure machine learning 2017.

AWARDS AND ACCOMPLISHMENTS

- Garnered **"GOLD MEDAL" (Top 1%)** in my undergraduate studies from Anna University at state level in 2011.
- Played the role of undergraduate **"STUDENT CHAIRMAN"** of Computer Science department in during 2010 - 2011.
- Had undergone 3-year **"YOUNG STUDENT SCIENTIST"** initiative by President of India, during my schooling.