

ANANDHARAJU DURAI RAJU (ANAND)

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SUMMARY

Impactful applied researcher enabling AI innovations for real-world challenges.
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 – Till Date**

- Successfully adopted “Sustainable AI” to the malware detection problem in Cybersecurity by addressing the time and space constraints of training CNN over extremely large sequence inputs.
- Achieved 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 Technology Lab **Jan 2021 – Dec 2021**

- Successfully published the first-ever survey paper on cross-architectural IoT malware threat hunting.
- Delivered a compact and top-performing neural network with 97% accuracy based on handcrafted LIEF features.
- Deployed a deep learning-based malware detection solution as a Docker release.
- 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 | Artificial Intelligence & 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 project development for UI, API and Spark modules to process real-time event data.
- Planned Agile sprints including effort estimation, resource allocation and execution.
- 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.