



Chandradeep Dutta

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ABOUT : With a Background in Computer Science, I have a strong interest in Network Security, Malware analysis, Mobile Application Security, Intrusion Detection and Botnet Detection. My background in academia enables me to create scalable and robust solutions that also preserve the privacy of users. Currently engaged in similar research projects, where I can apply new ideas and contribute to solving real-world security problems while gaining experience as an independent researcher through collaborating with other researchers. Being an expert in machine learning using PyTorch, Behaviour Analysis, Security Data Mining. My goal is to create reliable Systems of Trust in AI Systems that can understand Malware behaviours, Create Self-Supervised Learning, and defence against adversarially robust detection.

WORK EXPERIENCE [TEACHING : 3.5 YRS RESEARCH : 3 YRS]

 **SWAMI VIVEKANANDA UNIVERSITY – BARRACKPORE, WEST BENGAL, INDIA**

ASSISTANT PROFESSOR – 10/11/2025 – PRESENT

Teaching:

Course Development: Design and develop curriculum, lecture plan and course materials.

Instruction: Teach undergraduate and graduate courses, facilitating discussions, also engaging in other administrative duties related to academia such as guest lectures, attending seminars and presenting scientific paper in various conferences.

Research Skills:

1. Experimental Design.
2. Algorithm design & analysis.
3. Dataset curation.

Research Projects:

1. AI-Based Botnet Traffic Detection using Flow Features.
2. Honeypot-based IoT Attack Traffic Collection Framework.

Technical Skills:

AI/ML : Supervised/Unsupervised learning, Regression, classification, clustering, Feature engineering, Model evaluation metrics, Implementation of ML algorithms in Python.

Network Security: Malware analysis (both static & dynamic), botnet analysis, sandboxing, analysis of botnet behaviors in a virtual environment.

Research Skills : Familiarity with malware datasets, experiment design, Algorithm design & analysis.

Scientific Paper Submissions and Publications :

1. Android Malware Detection using Machine Learning.
2. Securing the Edge Novel Approaches for Early Detection of IoT Botnet Infections. (Submitted)
3. Quantum-Biological Automata: A Novel Framework for Modeling Chemical Reactions and RNA Secondary Structures.
4. Navigating Ethical AI in Personalized Marketing and Its Impact on Consumer Trust.

Teaching Subjects :

Operating Systems.
Computer Networks.
Database Management Systems
Introduction to AI/ML.

• **JECRC UNIVERSITY – JAIPUR, INDIA**

ASSISTANT PROFESSOR – 20/07/2024 – 7/7/2025

Teaching:

Course Development: Design and develop curriculum, lecture plan and course materials.

Instruction: Teach undergraduate and graduate courses, facilitating discussions and engaging students.

Assessment: Evaluate student performance through assignments, exams, and projects.

Teaching Subjects :

Operating Systems.
Programming with C/C++.
Computer Networks.
Programming with Java.

My primary research interests lie at the intersection of cybersecurity and intelligent systems, with a particular emphasis on:

- **Metadata Research:** Conducted research on metadata privacy in encrypted communication systems, focusing on anonymization and traffic analysis resistance.
- **Network Security and Intrusion Detection Systems (IDS):** Investigating robust, adaptive frameworks to detect and mitigate unauthorized access and anomalous behavior across heterogeneous network environments.
- **Malware Analysis and Resilience Engineering:** Conducting in-depth static, dynamic, and hybrid analysis of malicious software, with a focus on developing resilient detection models against evolving threat vectors.
- **Artificial Intelligence in Cybersecurity:** Leveraging machine learning and deep learning techniques for proactive threat intelligence, anomaly detection, and automated decision-making in cyber defense systems.
- **Botnet Detection and Disruption:** Designing intelligent detection mechanisms for botnet command-and-control architectures, with a focus on large-scale behavioral analysis and traffic pattern modeling.

🏢 **BENGAL COLLEGE OF ENGINEERING AND TECHNOLOGY – DURGAPUR, INDIA**

ASSISTANT PROFESSOR – 01/01/2023 – 19/07/2024

Professional Research Experience:

- **Designed and implemented AI-powered malware detection systems :** Leveraging advanced supervised and ensemble learning models such as Random Forests, Support Vector Machines (SVM), and Deep Neural Networks (DNN). The systems were trained and validated on benchmark datasets (e.g., KDDCUP99, UNSW-NB15) to ensure high detection accuracy, precision, and resilience against zero-day threats.
- **Conducted multi-layered malware analysis** using a combination of **static (opcode extraction, signature-based methods)**, **dynamic (sandboxing, API call monitoring)**, and **hybrid techniques** to gain a holistic understanding of malware behavior and propagation strategies. Tools used include Cuckoo Sandbox, IDA Pro, and Wireshark.
- **Applied cutting-edge machine learning frameworks** including TensorFlow, Scikit-learn, and Keras to implement and optimize models for anomaly detection, behavioral profiling, and automated feature extraction in large-scale cybersecurity datasets..
- **Investigated and analyzed TCP/IP protocols** to identify vulnerabilities in network traffic layers, employing packet capture tools and flow-based detection techniques for early-stage threat identification, DDoS detection, and botnet communication analysis.

- **Explored adversarial machine learning (AML)** approaches to understand model robustness against evasion attacks, and developed countermeasures for enhancing model security under adversarial conditions.

Teaching Subjects :

Operating Systems.
Programming with C/C++.
Introduction to Machine Learning with Python.

Collaboration and Communication:

Team Collaboration: Work with faculty, researchers, and students to advance research goals. Presentations: Prepare and deliver presentations on research findings at conferences and seminars. Publications: Write and co-author research papers for academic journals and conferences.

 **S.R.M. INSTITUTE OF SCIENCE AND TECHNOLOGY – CHENNAI, INDIA**

RESEARCH INTERN – 07/06/2022 – 01/01/2023

Conducted research in the domains of Cybersecurity, Malware Analysis, and Intrusion Detection, with a specialized focus on the application of Artificial Intelligence, Machine Learning, and Deep Learning techniques to enhance threat detection, classification, and system resilience.

Delivered undergraduate instruction in core computer science subjects including Java, C/C++, and Data Structures, as well as introductory modules on **Machine Learning with Python**, emphasizing both theoretical foundations and practical implementation.

Designed and delivered comprehensive course content, including lecture materials, programming assignments, lab exercises, and evaluation frameworks to facilitate active student engagement and measurable learning outcomes.

Contributed to curriculum development through the formulation of updated syllabi, incorporation of emerging technologies, and alignment with academic standards and industry relevance.

Collaborated with faculty members and postgraduate students on multidisciplinary research projects, fostering an academic environment conducive to innovation, critical inquiry, and scholarly publication.

■ EDUCATION AND TRAINING

10/07/2020 – 05/06/2022 Chennai, India

MASTER IN COMPUTER APPLICATIONS S.R.M Institute of Science and Technology

Highlights : Data Structures & Algorithms, Agile Methodologies, SDLC, Network Topologies, Knowledge on Git repositories, Object Oriented Analysis and Design etc.

Honours and Awards : Distinction and First-Class

Final grade 8.9/10 **Level in EQF** EQF level 7

15/07/2017 – 01/08/2020 Kolkata, India

BACHELORS IN COMPUTER APPLICATIONS Maulana Abul Kalam Azad University of Technology

Highlights : Discrete Mathematics, Computer Networks, Data Science, Machine Learning, Deep Learning, Computer Architecture, Theory of Computation.

Field of study Computer Science | **Final grade** 7.77/10 | **Level in EQF** EQF level 6

Other languages

LANGUAGE SKILLS

UNDERSTANDING	SPEAKING				
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C1	C2	C1

WRITING

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

TECHNICAL SKILLS

AI-DS | Cyber Security | JavaScript | HTML, CSS, Python | SQL | DBMS