Jibin Yesudas Varghese

Corvallis, OR 97330 | **4582724719** | jibinjithinyesudas@gmail.com

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Education

Oregon State University ⁣ October 2023 - December 2025
Master of Science in Computer Science ⁣ *Corvallis, OR*
- **CGPA:** 3.95
- **Relevant Coursework:** Machine Learning, Deep Learning, Cybersecurity, Human Computer Interaction, Ethics of Machine Learning, Software Engineering

APJ Abdul Kalam Technological University ⁣ August 2018 - June 2022
Bachelor of Technology in Computer Science ⁣ *Kottayam, Kerala*
- **CGPA:** 4.0
- **Relevant Coursework:** Data Structures & Algorithm, Cryptography and Network Security, Computer Networks, Data Mining, Distributed Systems

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Experience

Graduate Teaching Assistant ⁣ November 2024 - Present
Oregon State University ⁣ *Corvallis, OR*
- Mentored students on software engineering practices, object-oriented programming, modular system design, and distributed algorithms.
- Led lab sessions on production-grade code quality, automated testing, scalability, and reliability engineering.
- Conducted peer code reviews emphasizing efficiency, maintainability, and debugging strategies.

Security Analyst ⁣ April - June 2024
ORTSOC - Oregon State University ⁣ *Corvallis, OR*
- Monitored real-time network security events using Zeek and Elastic; identified, investigated, and documented security anomalies.
- Investigated suspicious behaviors using Open Source Intelligence techniques, simulating investigative procedures applicable to physical security.
- Prepared detailed incident reports and contributed to threat assessments to improve incident response strategies.
- Gained familiarity with access management, alarm point monitoring, and principles of surveillance security.
- Assessed security gaps in network defenses and access control procedures, applying investigative techniques similar to physical security audits.

MERN Stack Developer Intern ⁣ May - July 2023
NeoITO Technologies ⁣ *Trivandrum, India*
- Designed and developed full-stack web applications using JavaScript, Node.js, Express, React, and MongoDB.
- Implemented user authentication, authorization, REST APIs, and optimized database queries for performance.
- Practiced agile development with version control (Git), peer code reviews, and CI/CD pipeline integration.

Projects

Building IDS Datasets from ORTSOC Network Traffic Logs ⁣ January 2025 – Present
- Engineered a machine learning-ready IDS dataset by extracting, normalizing, and structuring large-scale Zeek network logs.
- Built provenance graphs to track event flows and simulate adversarial scenarios for anomaly detection studies.
- Balanced benign and malicious activity distributions, verified metadata integrity, and prepared datasets for public release following DARPA TC standards.

Automatic Pith Detection Using Deep Learning ⁣ Jan - Mar 2025
- Built deep learning models (YOLOv8, U-Net) in Python to automate segmentation tasks at scale.
- Engineered distributed data pipelines and performed extensive model evaluation with real-world datasets.
- Emphasized modular design, reusable components, and robust evaluation metrics (IoU, Dice Score).

Privacy Risk Analysis on ML Models ⁣ Jan - Mar 2024
- Modeled Membership Inference Attacks on large datasets to assess vulnerabilities in ML systems.
- Developed robust Python scripts for experimental setup, evaluation, and statistical reporting.
- Applied problem-solving skills to identify critical gaps in privacy defenses across various models.

Dynamic Social Media Web App (Full-Stack Project) ⁣ June - July 2023
- Engineered a scalable full-stack platform modeled on Twitter using MERN technologies.
- Designed database schemas, API endpoints, user authentication modules, and interactive UI components.
- Practiced modular coding, version control, and testing strategies to ensure reliability and maintainability.

Awards and Volunteering Experience

- **President of University Christian Center** (2024–Present), overseeing leadership development, event planning, and community outreach efforts.
- **Volunteered as a teaching assistant** in GenCyber NW Cyber Security Camp in Summer 2024 (July 2024- August 2024)
- **Achieved first place** in Winter-end boot camp on Android Using Flutter conducted by IIT Ropar.
- **Attained Second place** in QFiesta 2020, conducted by ISTE Mechatronics Club.

Skills

Programming Languages: C++, Java, Python, SQL, JavaScript, C
Technical Skills: Object-Oriented Design, Data Structures and Algorithms, Machine Learning, Distributed Systems, Software Engineering Best Practices, Cybersecurity, MERN Stack Development, Git/GitHub
Software Engineering:Distributed Systems, System Design, Scalability, Reliability Engineering, CI/CD Pipelines
Security Tools and Knowledge: OSINT, Incident Reporting, Surveillance Principles, Access Control Basics (Lenel/C-Cure awareness)
Frameworks and Tools: Elastic, Kibana, Zeek, Figma, MongoDB, Express, React, Node.js, VSCode, Git, Docker, Linux Systems, Figma