

Rick Gwei

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Work Experience

ByteDance R&D Engineer

Sep 2024 – Present

- Responsibilities: Led development of forensic watermarking systems and drove traceability watermark coverage from 33% to 75%; responsible for shift-left security initiatives and automated penetration testing infrastructure.
- Awards: 2024 H2 Security Elite Award; 2025 Q1 Spot Bonus; 2025 Q4 Spot Bonus Lark Star.
- Patents: CN121093318A, CN121167689A

JD.com Machine Learning Engineer

Jul 2021 – Sep 2024

- Responsibilities: Participated in core data security product design and development; responsible for digital watermarking, user anomaly behavior detection, and data classification & grading systems.
- Awards: 2021 JD Group Information Security Department Excellence Award; 2023 JD Information Security Department Breakthrough Individual Award.
- Patents: CN114626968A, CN114692099B, CN115240209A

JD.com Software Development Engineer Intern

Sep 2020 – May 2021

- Responsibilities: Developed and designed the permission handover feature for departing and transferring employees, integrating with 40+ sensitive data systems to enable risk-employee permission transition.

Education

Beijing Information Science & Technology University Computer Science Bachelor

Sep 2017 – Jun 2021

- Competitions: Third Prize in China University Computer Game Competition (International Draughts 100); Third Prize in Internet+ College Student Innovation & Entrepreneurship Competition (University Level).
- Scholarships: Innovation & Entrepreneurship Scholarship; Social Contribution Scholarship.
- Volunteering: QCon Speaker Assistant (2017, 2018).
- GPA: 82/100

Projects

Digital Watermarking System

- Overview: Designed and built a full-scenario digital watermarking platform covering web pages, documents, images, and audio/video, supporting data leak tracing, copyright protection, and regulatory compliance, serving thousands of sensitive applications.
- Core Capabilities: Provided gateway, API, and RPC integration methods, supporting both internal SSO and Lark SSO dual-account systems, handling tens of millions of daily watermark embedding requests and millions of daily watermark extraction requests.
- Key Achievements: Drove traceability watermark coverage from 33% to 75%; built Lark Docs invisible watermarking integrated with DLP from scratch, enabling tracing of 3,000+ daily document sharing events; designed invisible character watermarking algorithms covering PDF/DOCX/XLSX/PPTX file formats.

Asset Security Platform

- Overview: Security asset management and risk discovery platform providing SDLC security controls, asset discovery, and automated penetration testing capabilities.
- Responsibilities: Completed SDLC tagging feature upgrades and aPaaS historical data synchronization; integrated AI-SDLC to enable automated penetration testing for new API endpoints in BOE/PPE environments, driving shift-left security adoption.

UEBA Detection Algorithms

- Overview: Built subject-object access behavior profiles from east-west traffic data, using clustering algorithms for multi-dimensional risk feature analysis to generate governance alerts.
- Responsibilities: Built user sensitive data and file sensitive data access behavior profiling and feature engineering from scratch, proactively uncovering dozens of internal data breach incidents.

Data Classification & Grading System

- Overview: Built structured and unstructured sensitive data asset inventories to meet regulatory requirements and enhance proactive risk awareness.
- Responsibilities: Independently designed data classification model algorithms, integrating with object storage, offline logs, offline tables, online tables, and gateway logs to output sensitive data scanning and tagging.

Skills

Programming Languages: Good Prompt; Python; Java; Go; C/C++; JavaScript; SQL

Development Tools: Git; Vim; Bash; Docker

Productivity Tools: ClaudeCode; Antigravity; Many Skills