

Ruei-Hong (David) Liao

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Education

University of Wisconsin-Madison

Bachelor of Science, Computer Science
3.739 GPA

Awards: Dean's List

Relevant Coursework: Introduction to Computer Engineering, Introductory Applied Statistics for Engineering, Introduction to Cryptography, Introduction to AI, Machine Organization and Programming, Introduction to Algorithm, Intro to Information Security, Intro to Operating Systems, Foundations of Mobile Systems and Applications, Education, Technology, and Society: AI, Big Data, and the Digital Divide

December, 2025

Technical Skills

Programming: Java, Bash, HTML and CSS, JavaScript, C, Python, Go, Angular

Operating System: Windows, Linux

Technical expertise: Git, MS Excel, PowerPoint, Google documentations

Experience

Micro-Star International Intern

In-Person

May 2025 – August 2025

- Developed and deployed a production-ready electric vehicle charging information platform used in Taiwan's national charging ecosystem, integrating Angular (frontend) with Go, Gin Gonic, GORM, PostgreSQL, and Docker (backend).
- Implemented compliance with Taiwan Ministry of Transportation's EV Charger Data Standard (XML schemas V1.03) for operators, stations, connectors, and real-time status feeds, enabling interoperability across government and private systems.
- Built real time dashboards and APIs with Server-Sent Events (SSE) to provide instant charger status and metrics, improving operational monitoring.
- Designed secure user workflows including login/authentication (JWT), password recovery, and CPO (Charge Point Operator) assignment with validations.
- Awards: Taiwan Excellence Award 2025 and the German design iF Red Dot Awards 2025

National Institute of Cybersecurity of Taiwan Intern

In-Person

May 2024 – August 2024

- Integrate the Llama Guard module into the ChatGPT examples to ensure the AI model can detect and respond to various security threats
- Utilize Azure AI voice services to convert presentation notes into voiceovers for recording high-quality Government Configuration Baseline instructional videos
- Test the security configuration compliance tool for RedHat Enterprise Linux 8 to ensure its effectiveness
- Deploy Windows Server 2016 TW Government Configuration Baseline using the LGPO tool to enhance the operating system's configuration security
- Conduct host vulnerability scanning and validation using Nessus and Nmap tools to assess system security risks
- Study EC-Council CEH course materials to learn cybersecurity techniques and knowledge

Projects

Econnect Monitor (Electric Vehicle Charging Platform) | Angular, Go/Gin with PostgreSQL, Docker

- Built a full stack electric vehicle charging monitoring
- Implemented real-time charger status dashboards (via SSE) and CPO management tools (search, edit, station assignment).
- Integrated with Taiwan's EV Charger Data Standard (XML V1.03), enabling nationwide interoperability.
- Awarded: Taiwan Excellence Award 2025 and the German design iF Red Dot Awards 2025

Teeko AI Player (Minimax Algorithm)

- Implemented a complete minimax-based AI with successor generation, terminal-state scoring, and a custom heuristic, allowing the agent to choose strong moves within a five-second limit.
- Tuned search depth and evaluation heuristics to achieve consistent wins against multiple difficulty levels, meeting performance

criteria for all automated opponents.

Control Flow Hijacking & ROP Project | C, x86, GDB

- Engineered exploits that hijacked program control flow through stack and heap overflows and chained PLT and gadget calls to perform privileged actions.
- Designed custom ROP payloads using extracted gadgets to manipulate registers, clear arguments, and execute sequences of protected functions.
- Validated exploit behavior step-by-step using gdb's memory inspection and register tracing, ensuring reliable and reproducible attacks.

Applied Cryptanalysis Tools | C

- Engineered cryptanalysis routines capable of breaking classical ciphers by inferring key structure through statistical analysis and search heuristics.
- Applied dictionary frequency models and scoring techniques to evaluate plaintext candidates and automate key recovery for multiple cipher family.

Badger Huddle · Pickup Sports Mobile App | Kotlin, Android Studio, Firebase/Server Backend

- Designed an Android app that helps UW–Madison students host, join, and discover pickup sports games across campus recreation facilities.
- Implemented features for checking in to courts using device geolocation, hosting and RSVP'ing to games, and viewing active or nearby sessions.
- Created user profiles storing preferred sports and availability, enabling peer-to-peer profile sharing for forming repeat groups and friendships.
- Planned backend architecture to track courts, live player counts, RSVPs, and user accounts, ensuring safe and UW-only participation.